SANYO

CD Portable Stereo Radio/Cassette Recorder

- Top-loading CD player with 16-selection programmability and repeat play
- Synchronized CD-to-tape dubbing system
- BASSXPANDER sound system
- [redacted]
- LED display for CD track no., playback, repeat and memory
- FM stereo/MW/SW1/SW2 radio
- Full auto stop cassette deck
- One-touch recording system

MCD-Z16K

50W (P.M.P.O.)

SF-8524AJ

MCD-Z16K

Main Features

Top-loading CD player designed for superlative reproduction of digital audio 12cm compact discs and 8cm CD singles and equipped with a variety of convenient functions for enhanced playback flexibility.

16 music memory program allows the user to preprogram playback of up to 16 selections in any desired order to give the CDs you play most often a new lease of life.

Synchronized CD-tape dubbing system starts the compact disc and the cassette simultaneously at the touch of a button for simplified CD-to-tape recording.

BASSXPANDER sound system delivers a rich, extended bass sound effect that gives your music extra depth and presence and brings out the full potential of CD audio sources.

~~**Microphone mixing function** allows you to enjoy "karaoke" style singing by adjusting the microphone volume according to the dictates of the music~~

LED display provides easy-to-see indications for CD track no., playback, repeat and memory to allow visual confirmation of the CD player's operational status.

Other Features

- FM stereo/MW/SW1/SW2 tuner for clear reception of all your favorite radio stations.
- Full auto stop in all tape transport modes reduces the wear on both the cassette tapes and the mechanism.
- One-touch recording system automatically locks in play button when record button is pressed.
- Soft eject cassette system ensures gentle cassette loading and ejection.
- Stereo headphone jack provided for personal listening enjoyment.
- 12cm full range speaker system for full-bodied stereo sound output.
- 50W (P.M.P.O.) output power.
- Operates on 8 size "D" batteries or on AC power from a regular household outlet.
- Carrying handle for ease of portability.

Specifications

CD Section	
Frequency response	20–20,000Hz
Dynamic range	70dB
Wow & flutter	Undetectable
S/N ratio	70dB
Sampling frequency	44.1kHz
Quantization	16 bits linear/channel
Error correction system	CIRC
Pickup	3 Beam
Radio Section	
Tuning ranges	MW: 525-1610kHz SW1: 2.3-7.0MHz SW2: 7.0-22.0MHz FM: 87.5-108MHz
Sensitivity	MW: 100uV/m, SW1: 100uV/m, SW2: 10uV, FM: 1uV
Antennas	Built-in ferrite bar and telescopic rod antenna
Cassette Section	
Recording system	AC bias
Erasing system	Magnet erase
Tape speed	4.75cm/sec.
F. forward and rewind time	110sec. (C-60 tape)
Wow & flutter	0.15% WRMS
Frequency response	80–12,000Hz
S/N ratio	40dB
General	
Output power	50 W (P.M.P.O.)
Power source	DC: 12 V (8 size "D" batteries), AC: 110-127/200-220/ 230-250 V, 50/60Hz
Loudspeakers	Woofers: 12 cm x 2
Terminals	~~[illegible]~~ Headphones 32 ohms 3.5mm Ø x 1
Dimensions (W x H x D)	556 x 170 x 210 mm (21⅞" x 6 1/16" x 6¼")
Weight	3.4kg (7 lbs., 8 ozs.)

* Specifications subject to change without notice.

Distributed by:

SANYO

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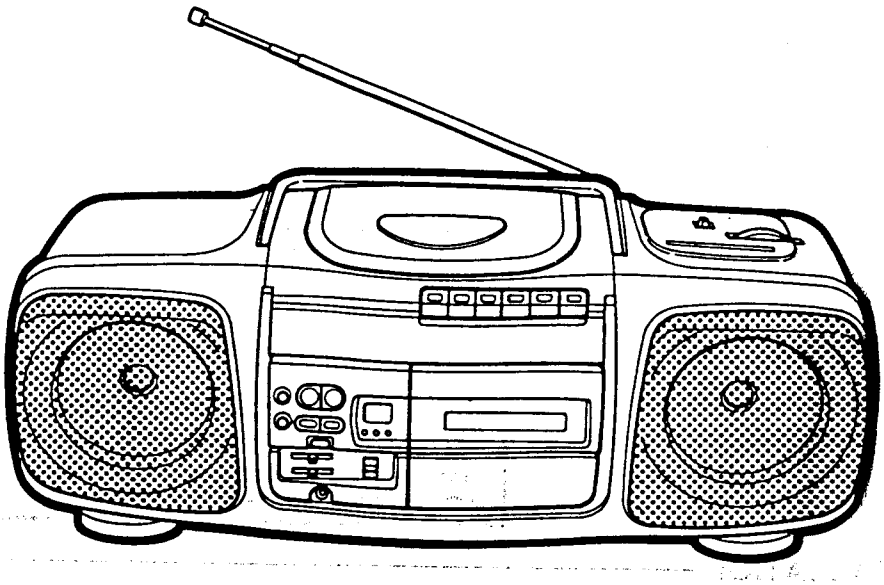
SANYO

FILE NO. 93 LOCAL Inc

Service Manual

CD Portable
FM Stereo /AM Radio
Cassette Recorder

MCD-Z16F (AU)
(NZ)



Specifications

PRODUCT CODE No.
142 941 05

(CASSETTE SECTION)

Recording system	AC bias, 4 track stereo
Erasing system	Magnet erase
Tape speed	4.75 cm / sec.
Fast forward and rewind time	110 sec. (C-60 tape)
Frequency response ..	80 ~ 12,000 Hz (Normal tape)

(CD SECTION)

Channels	2 channels
S / N ratio	70 dB
Wow & Flutter	undetectable
Sampling frequency ...	44.1 kHz
Quantization	16 bits linear / ch
Pick-up light source ...	Semi-conductor laser
Pick-up wave length ...	790 nm

Specifications subject to change without notice.

(RADIO SECTION)

Tuning ranges	FM : 88 - 108 MHz AM : 525 - 1,710 kHz
Antennas	Built-in ferrite bar and telescopic rod antennas

(GENERAL)

Output power	4.0 W × 2 (DC max.)
Speaker	12 cm x 2, 4 ohms
Terminal impedance ..	PHONES : 32 ohms
Power source	AC : 230 - 240 V, 50 Hz DC : 12 V (8 × "D " size batteries)
Dimensions	556(W) x 170 (H) x 215 (D) mm
Weight	Approx. 3.4 kg including batteries

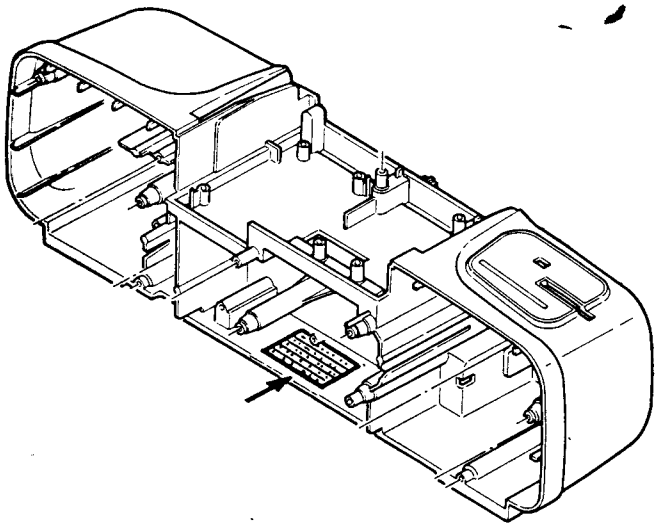
REFERENCE No. SM580208

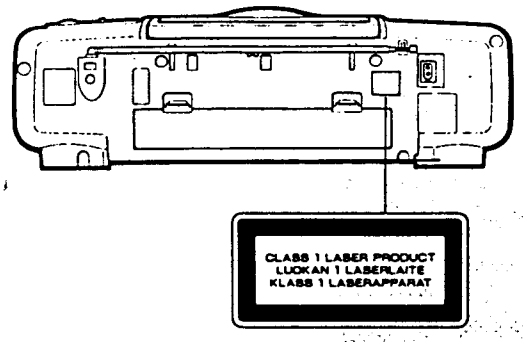
LASER BEAM SAFETY PRECAUTIONS

- Pick-up that emits a laser beam is used in this CD player.

CAUTION :
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE

LASER OUTPUT ..... 0.6 mW Max. (CW)
WAVELENGTH ..... 790 nm





CAUTION—INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL—USYNLIG LASER STRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION, UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARNING—OSYNLIG LASER STRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD. STRÅLEN ÄR FARLIG.
VORSICHT—UNSICHTBARE LASERSTRAHLUNG TRITT AUS, WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT IST. NICHT, DEM STRAHL AUSSETZEN.
VARO! Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilyile. Älä katso säteeseen.

REMOVAL AND INSTALLATION

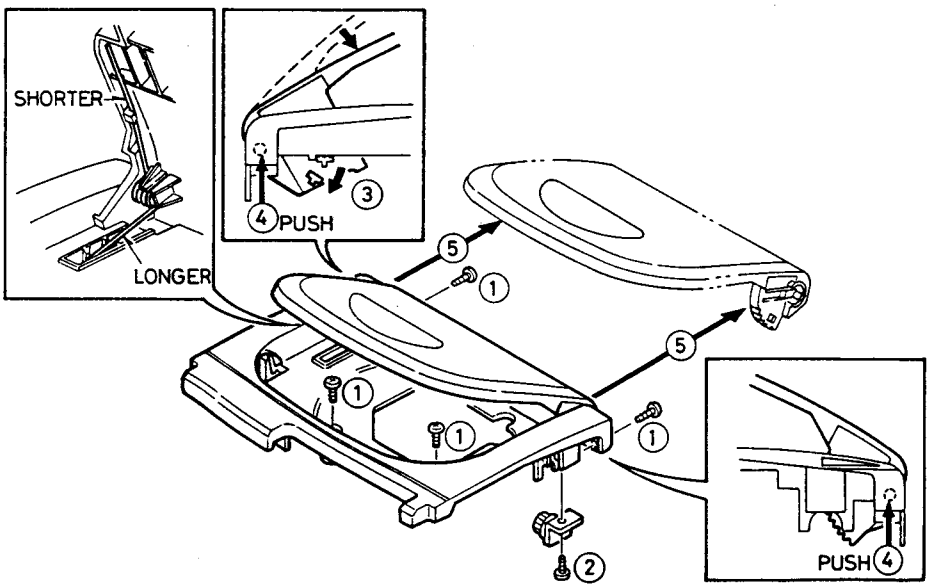
- Disconnect the power cord's plug from the electrical outlet.
- All wiring should be returned to the original position after work is completed.
- First have ready many the new FIXERS (614 129 4971) for replacement.
- Arrange the lead wires so that they are not near the heat sink.

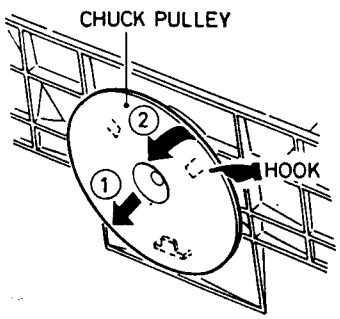
a. CABINET

(1) Remove the battery lid.
(2) Remove the 7 rear cabinet mounting screws. (▸)

b. TOP PANEL

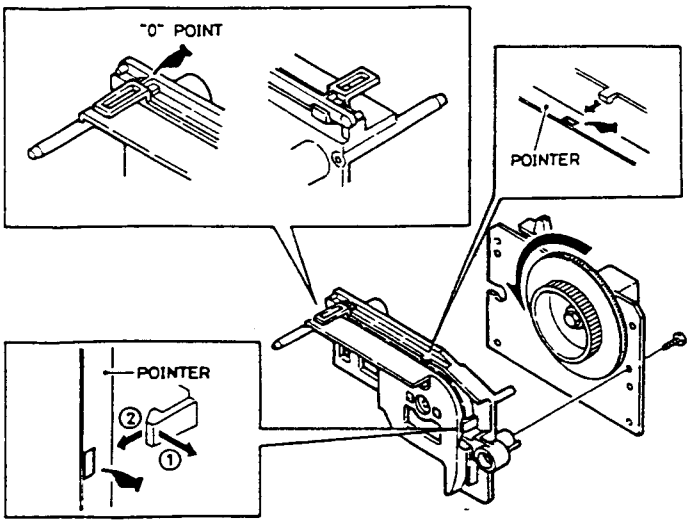
(1) Remove the 4 top panel mounting screws.
(2) Remove the top panel.
(3) Remove the chuck pulley.



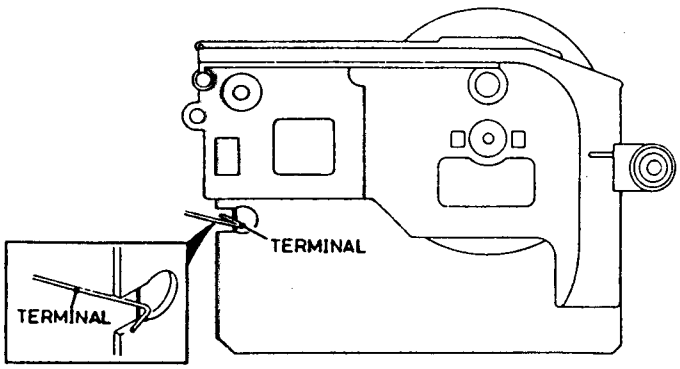


REMOVAL AND INSTALLATION

c. "0" POINT ADJUSTMENT



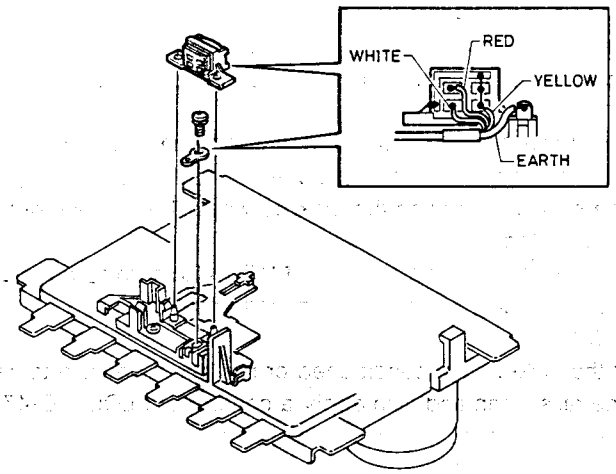
d. ROD ANTENNA TERMINAL



TAPE DECK ADJUSTMENTS

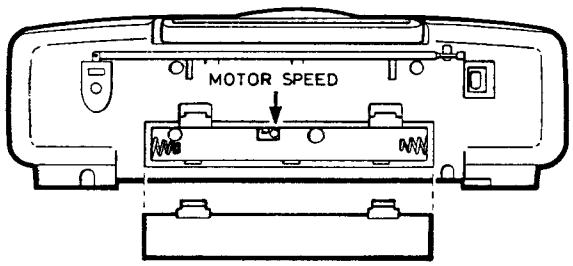
a. HEAD REPLACEMENT

- After replacement, demagnetize the heads by using a degausser.
- Be sure to clean the heads before attempting to make any adjustments.
- All wiring should be returned to the original position after work is completed.



b. MOTOR SPEED ADJUSTMENT

(1) Insert the test tape (MTT-111N, etc., 3000 Hz) into tape deck.
(2) Press tape deck PLAY button.
(3) Adjust SVR so that the frequency counter shows are reading of 3,000 Hz.



c. CHECKING THE MECHANISM TORQUES AND TENSION

- Clean the head, capstan and pinch roller before making any measurement.

Measurement	Take-up torque	Back tension	Tape tension
Cassette for measurement	PLAY:TW-2111A F.FWD/REW:TW-2231	PLAY:TW-2111A	Drive-power cassette TW-2412
PLAY	30~ 60 gr.cm	2.0~ 4.5 gr.cm	60 gr or more
F.FWD	55~ 120 gr.cm	–	–
REW	55~ 120 gr.cm	–	–

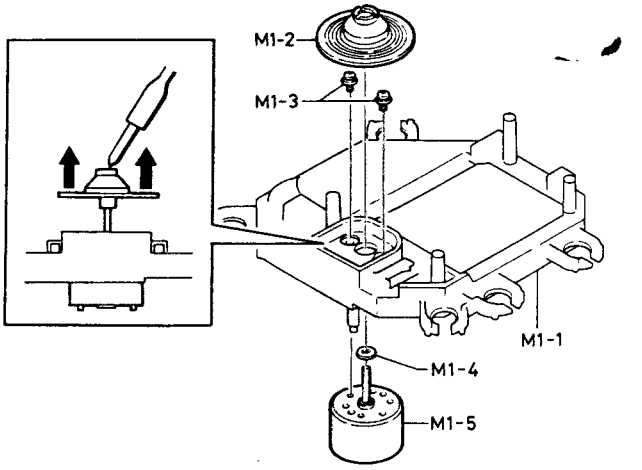
CD PLAYER ADJUSTMENTS

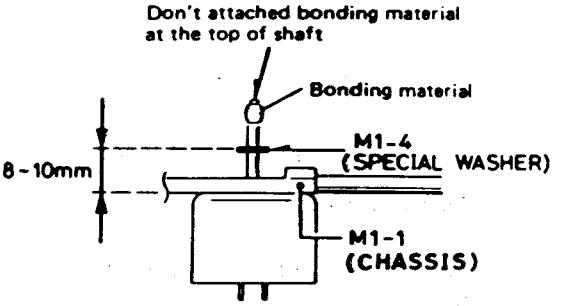
a. DISASSEMBLY OF THE CD PLAYER MECHANISM

(a) Replacement of the spindle motor

- First, prepare the new turntable (M1 - 2) and new special washer (M1 - 4) for replacement.
  The removed turntable will be deformed by the heat of the soldering iron, and cannot be reused.
- Prepare dial type calipers.

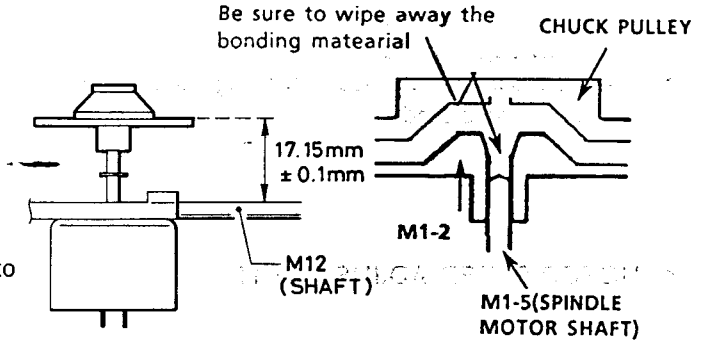
(1) The attached bonding material can be dissolved by using a 60W soldering iron to heat the shaft at the lower part of the turntable (M1-2) for about one minute.
(2) The turntable can then be removed from the shaft by very carefully applying force upward at the center of the lower surface of the turntable.
(3) Remove the two screws (M1-3) and remove the spindle motor (M1-5).
(4) Attach the special washer (M1-4) to the spindle motor.
(5) Apply a small amount of a mixture of the "Three Bond 2001" and "2015F" bonding materials to the motor's shaft.
(6) Install the turntable as shown in the figure.
(7) Secure the turntable by pressing gently.
Be sure to wipe away (by using a piece of cloth, or similar material) any bonding material coming out of the hole.

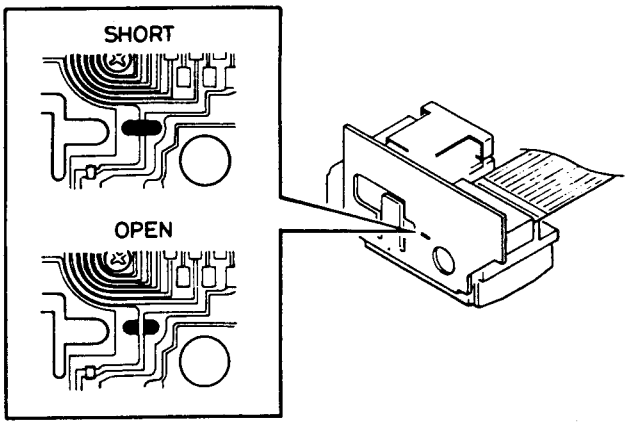


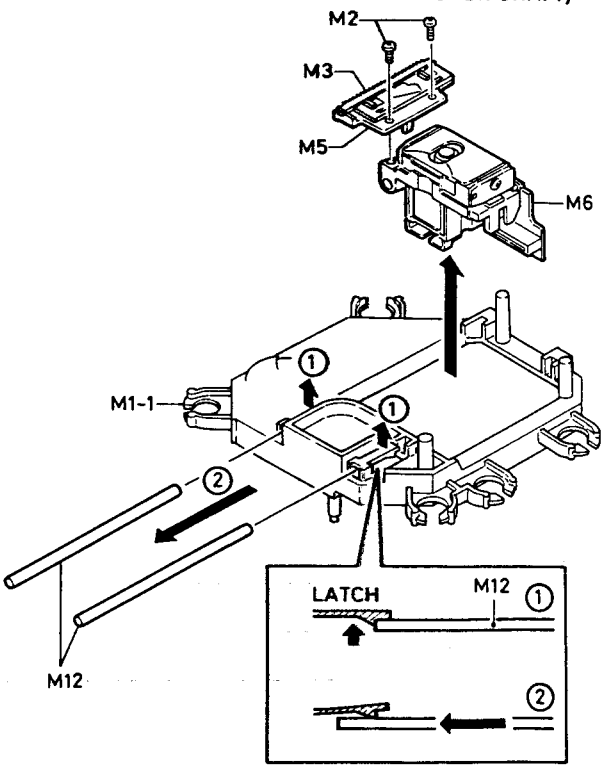


(b) Replacement and lubrication of the pick-up

(1) Before replacement of the pick-up, be sure to carefully read the section regarding the pick-up when the unit is moved or transported.
(2) Remove the two pick-up rail (M12) with care fixing the two latch with any way driver from bottom of chassis (M1-1).
(3) If the pick-up is reconditioned or replaced, be sure to wipe the rails clean and also apply a coating of FLOIL (G-474B) to their entire circumference and entire length.
(4) After replacement, install the shaft as before.
(5) The pick-up P.C.Board pattern is "**shorted**", as shown in the figure , so that the new pick-up will not be susceptible to the effects of static.
(6) Set the pattern to "**open**" after the pick-up has been replaced.







CD PLAYER ADJUSTMENTS

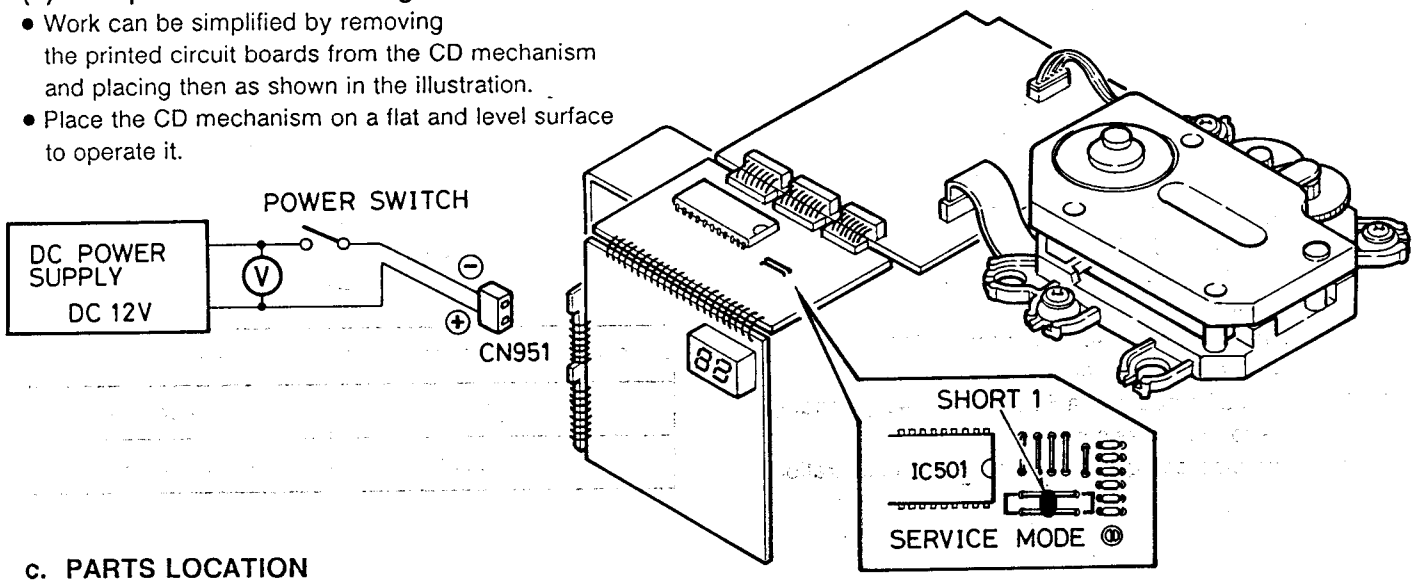
b. PREPARATIONS

(a) Measuring instruments, tools and filter

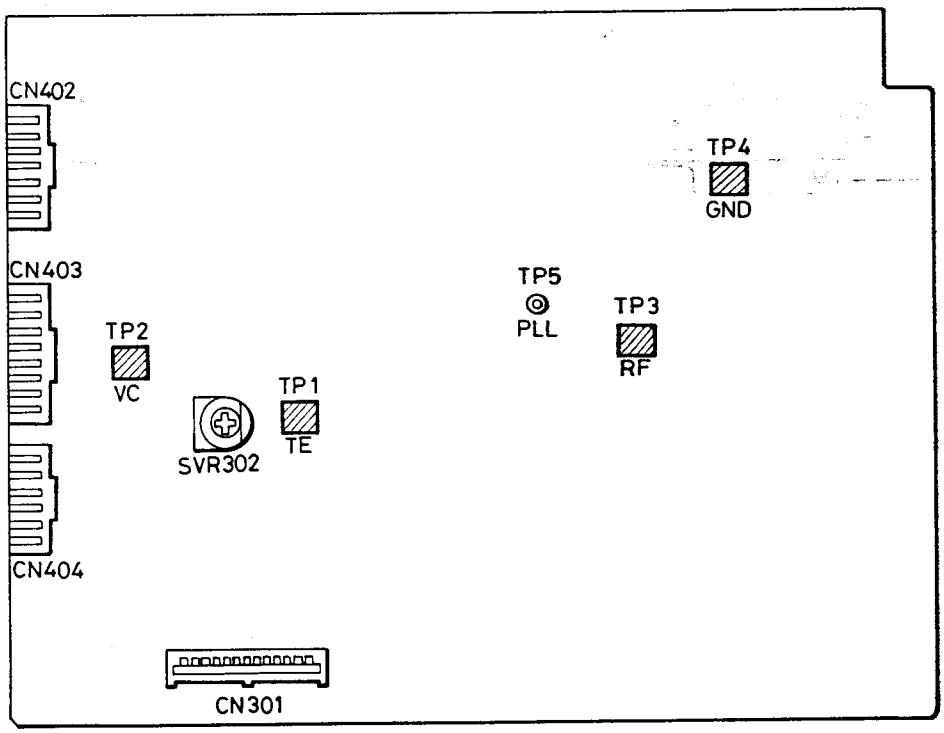
(1) Test disc. : YEDS 18 (SONY) or etc.
(2) Oscilloscope : SS5711
(10 MHz or dual-phenomenon)
or Memoryscope : DSS6521 (Storagescope)
(3) DC digital voltmeter (Input impedance
1M ohm or more)
(4) AC voltmeter (- 80 dB, input impedance
1 M ohm or more)
(5) AF oscillator (400 Hz, 300 mV RMS)
(6) Frequency counter (5 MHz ; or more)
and probe (10 : 1)
(7) Screwdrivers (non-metallic) for adjustments
(8) Low Pass Filter (L.P.F.)
(9) DC Power supply : 12 V, 1 A

(b) Component locations diagram

- Work can be simplified by removing the printed circuit boards from the CD mechanism and placing then as shown in the illustration.
- Place the CD mechanism on a flat and level surface to operate it.



c. PARTS LOCATION



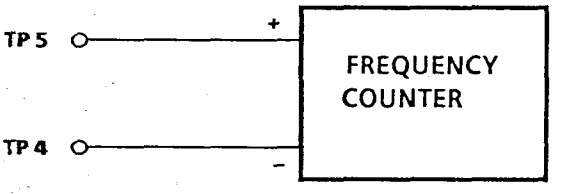
CD PLAYER ADJUSTMENTS

Adjustment Item	Measuring instrument	Short-circuit location	Input connection	Output connection	Adjust-ment location	Adjustment value
(a) PLL VCO free-run	Frequency counter	SHORT 1	—	TP 5 (PLL) TP 4 (GND)	—	4.300 MHz - 5.000 MHz
(b) Tracking balance	Oscilloscope L.P.F.	SHORT 1	—	TP 1: TE TP 2 : VC2.5V	SVR302	Waveform symmetry A = B 1.5 Vp-p
(c) Checking the "eye" pattern	Oscilloscope	–	—	TP 3 : RF TP 2 : VC2.5V	—	Check be sure that the "eye" pattern is at the center of the waveform and that the diamond shape is clearly defined

d. ADJUSTMENTS

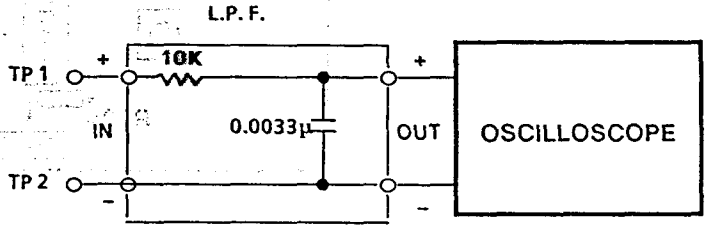
(a) PLL VCO free-run adjustment

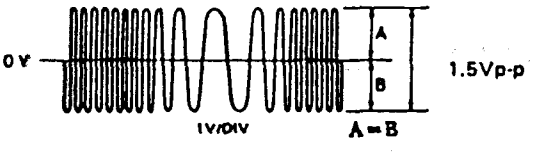
(1) Test disc removed from the unit.
(2) Short-circuit points 1 on the printed-circuit board.
(3) Connect a frequency counter to TP 5 (PLL) and TP 4 (GND).
(4) Switch ON the DC power (12.0 V)
(See component locations diagram at page 5)
(5) Check the reading of the frequency counter is 4.300 MHz - 5.000 MHz.
(6) Cancel the short-circuiting of short-circuit point 1 on the printed-circuit board.



(b) Tracking balance adjustment

(1) Short-circuit points 1 on the printed-circuit board.
(2) Connect an oscilloscope to TP 1 (TE) and TP 2 (VC 2.5V).
(3) Switch ON the DC power.
(4) Set the test disc.
(5) PLAY switch push ON.
(6) Cancel the short-circuiting of short-circuit point 1 on the printed-circuit board.
(7) Adjust SVR302 so that the oscilloscope's waveform is symmetrical, as shown in the illustration.
(8) Switch OFF the DC power.

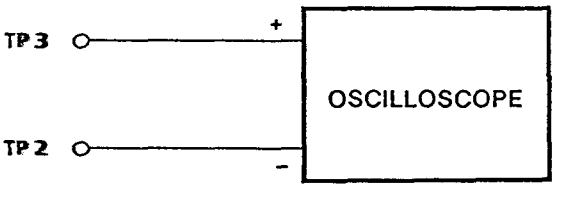


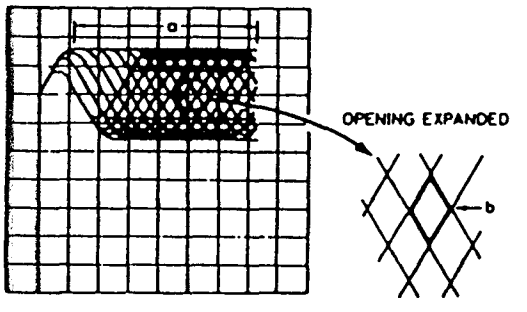


(c) Checking the eye pattern

- The adjustments (a) - (b) complete the adjustments of the CD player.
  Next, check the eye pattern waveform.

(1) Switch ON the DC power.
(2) Connect an oscilloscope to TP 3 (RF) and TP 2 (VC 2.5V).
(3) Load the test disc.
(4) PLAY switch push ON.
(5) Check to be sure that the " eye " pattern is at the center of waveform and that the diamond shape is clearly defined.
(6) Press the STOP button.
(7) Switch OFF the DC power.



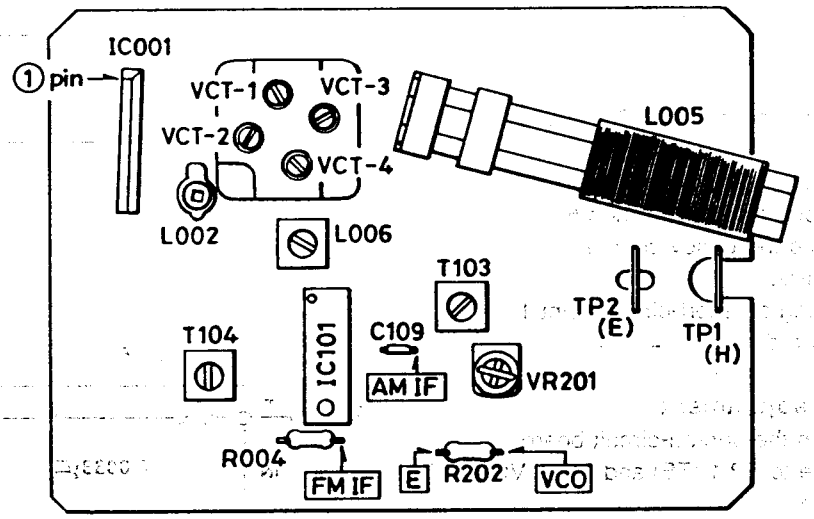


TUNER ADJUSTMENTS

- Use a plastic screw driver for adjustments.
- Adjust the intermediate frequency of AM and FM to the frequency of ceramic filter.

Supply voltage : DC 12.0 V
Phones impedance : 32 ohm
Standard output : 0.5 mW (126 mV)
Function switch : RADIO
TONE controls : HIGH

PARTS LOCATION

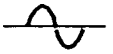


a. AM ADJUSTMENT : BAND SELECT SWITCH : AM

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	IF	Closed the output terminal by sweep generator, it place to L005.	Connect sweep generator to C109(H) & R202(G)	455 kHz	Low	T104	
2	Tuning coverage	Connect AM SG to Test Loop	Connect VTVM to speaker terminals	517 kHz	Low end	L006	Max.
3				1750 kHz	High end	VCT-4	
4	Tracking	Connect AM SG to Test Loop	Connect VTVM to speaker terminals	600 kHz	600 kHz	L005	Max.
5				1400 kHz	1400 kHz	VCT-3	
6	Repeat adjustments						

TUNER ADJUSTMENTS

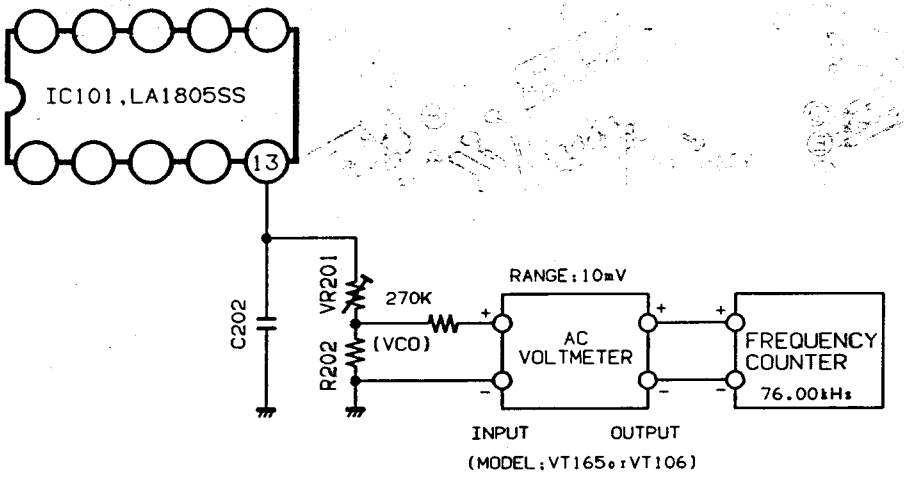
b. FM ADJUSTMENT BAND SELECT SWITCH : FM FM Dummy antenna : 75 ohm unbalance

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	IF	Connect sweep generator to IC001 ① (H) & TP 2 (G)	Connect sweep generator to R004 (H) & R202 (G)	10.7 MHz	Low	T103	
2	Tuning coverage	Connect FM SG to TP1 (H) & TP2 (G)	Connect VTVM to speaker terminals	87.0 MHz	Low end	L002	Max.
3				109.0 MHz	High end	VCT-2	
4	Tracking	Connect FM SG to TP1 (H) & TP2 (G)	Connect VTVM to speaker terminals	98.0 MHz	98 MHz	VCT-1	Max.
5	Repeat adjustments						

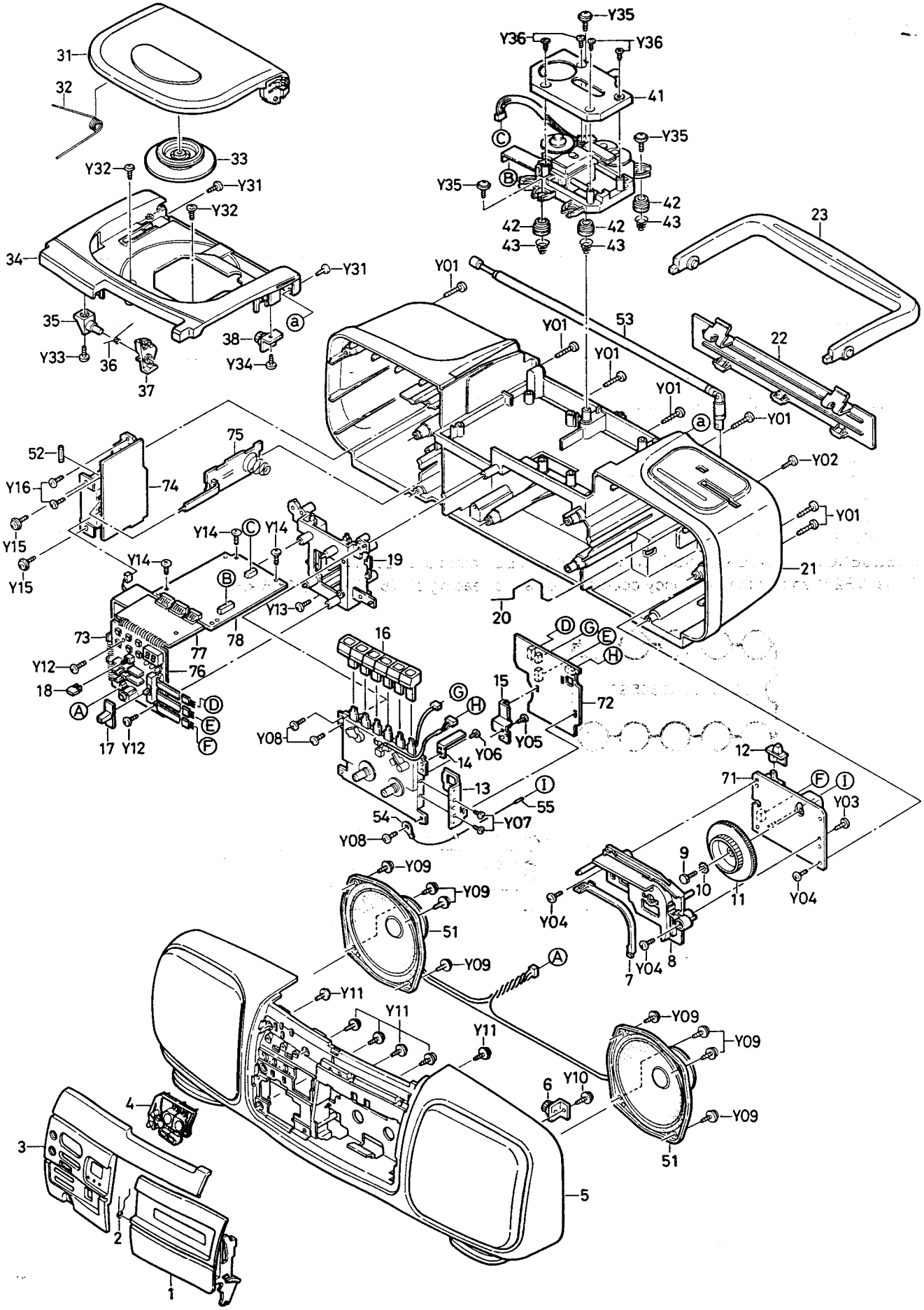
c. FM VCO ADJUSTMENT BAND SELECT SWITCH : FM

(1) Input signal : 60 dB 22.5kHz Non-modulation. at 98.0 MHz
Connection : Hot to TP-1, Ground to TP-2
Pilot signal : OFF
(2) Adjustment : VR201
FREQUENCY : 76.00 kHz ± 0.15 kHz

- FREQUENCY COUNTER SENSIBILITY : HIGH LEVEL (more than 20 mV p-p)
- Adjust VR201 so that the frequency counter shows are reading of 76.00 kHz ± 0.15 kHz.



EXPLODED VIEW (CABINET & CHASSIS)



PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CAUTION: Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	614 253 9538	INNER CARTON
	614 253 1280	PAD,TOP
	614 253 1297	PAD,BOTTOM
	614 228 0331	SHEET,SET COVER
	614 253 9552	INSTRUCTION MANUAL
	⚠614 250 6578	POWER CORD,AC
	614 231 6832	LABEL,SAFETY,LASER CLASS

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	614 252 3285	ASSY,LID,CASSETTE
2	614 238 1564	SPRING WIRE,CASSETTE LID
3	614 252 3292	ASSY,ESCUTCHEON
4	614 252 3568	BUTTON,CD OPERATION
5	614 252 3209	ASSY,CABINET
6	614 069 0385	GEAR ASSY,DAMPER CASSETTE-LID
7	614 237 8564	POINTER,TUNING
8	614 237 3934	MOUNT-M,TUNING
or	614 256 4271	MOUNT-M,TUNING
9	411 098 7107	BOLT HEX C-SCT 2.6X12MM, TUNING CAPACITOR
10	411 085 1200	WASHER OUT TW 2.6X5.8X0.3MM, TUNING CAPACITOR
11	614 237 3880	KNOB,ROTARY,TUNING
12	614 238 9447	KNOB,SLIDE,BAND
13	614 237 3927	BRACKET-E,PRE-AMP PCB
14	614 216 9346	SPRING,PLATE,RECORD/PLAY CHANGE
15	614 238 1502	BRACKET-E,PRE-AMP PCB SUPPORT
16	614 252 3575	BUTTON,TAPE MECHANISM
17	614 237 9011	KNOB,SLIDE,FUNCTION
18	614 253 1112	BUTTON,BASSXPANDER
19	614 237 8588	MOUNT-E,CHASSIS, CD-OPERATION
20	614 249 5353	TERMINAL,ROD ANTENNA
21	614 253 9002	ASSY,CABINET,REAR
22	614 247 0657	LID,BATTERY
23	614 252 3599	HANDLE
31	614 252 3230	ASSY,LID,CD
32	614 249 5384	SPRING WIRE,CD LID,OPEN
33	614 238 2332	ASSY,PULLEY,CD
34	614 252 3445	PANEL,TOP,CD-PANEL
35	614 237 9035	SHAFT,LEVER
36	614 238 1571	SPRING WIRE,CD OPEN/CLOSE
37	614 237 9059	LEVER,CD OPEN/CLOSE
38	614 069 0385	GEAR ASSY,DAMPER,CD LID
41	614 237 9004	ESCUTCHEON,CD MECHANISM COVER
42	614 247 6048	CUSHION,CD DAMPER
43	614 240 8308	SPRING,COMP,CD MECHANISM

FIXING PARTS

Ref. No.	Part No.	Description
Y01	411 026 3805	SCR S-TPG PAN 3X20MM, CABINET/BACK LID
Y02	411 031 4200	SCR BIN 3X12MM,ROD ANTENNA
Y03	411 021 4005	SCR S-TPG BIN 3X12MM, TUNER-P.C.BOARD/MOUNT
Y04	411 021 4005	SCR S-TPG BIN 3X12MM, TUNER-P.C.BOARD/BACK LID
Y05	411 025 1901	SCR S-TPG PAN 2X3MM, TAPE MECHANISM-BRACKET-E
Y06	411 025 1901	SCR S-TPG PAN 2X3MM, REC SPRING PLATE
Y07	411 025 1901	SCR S-TPG PAN 2X3MM, TAPE MECHANISM-BRACKET-E
Y08	411 021 4005	SCR S-TPG BIN 3X12MM, TAPE MECHANISM
Y09	411 020 9100	SCR S-TPG BRZ+FLG 3X12MM, SPEAKER
Y10	411 020 9100	SCR S-TPG BRZ+FLG 3X12MM, CASSETTE DAMPER GEAR
Y11	411 020 9100	SCR S-TPG BRZ+FLG 3X12MM, ESCUTCHEON MTG.
Y12	411 021 4005	SCR S-TPG BIN 3X12MM, AMP P.C.BOARD-CHASSIS
Y13	411 021 4005	SCR S-TPG BIN 3X12MM, CHASIS-BACK LID
Y14	411 021 4005	SCR S-TPG BIN 3X12MM, CD MAIN P.C.BOARD
Y15	411 020 9100	SCR S-TPG BRZ+FLG 3X12MM, POWER TRANSFORMER
Y16	411 021 3503	SCR S-TPG BIN 3X10MM, AC POWER SOCKET
Y31	411 021 4104	SCR S-TPG BIN 3X12MM, CD-PANEL
Y32	411 021 4104	SCR S-TPG BIN 3X12MM, CD-PANEL
Y33	411 021 4005	SCR S-TPG BIN 3X12MM, CD-SHAFT
Y34	411 021 4005	SCR S-TPG BIN 3X12MM, CD DAMPER GEAR
Y35	412 032 6408	SPECIAL SCREW,CD MECHANISM
Y36	411 030 2504	SCR TPG PAN PCS 1.7X4MM, CD PICK-UP COVER

ELECTRICAL PARTS

Ref. No.	Part No.	Description
51	614 251 5860	SPEAKER,4 OHM
52	⚠423 016 7809	FUSE 250V 2A (F3951)
or	⚠423 005 9500	FUSE 250V 2A (F3951)
53	614 237 5051	ANTENNA,ROD
or	614 240 6564	ANTENNA,ROD
54	614 051 9785	LUG,GROUND
55	614 253 4298	ASSY,SOCKET,1P,TAPE MECHANISM/TUNER P.C.BOARD
CN003	614 238 9140	ASSY,CONNECTOR-S,3P,SPEAKER
or	614 246 6384	ASSY,CONNECTOR-S,3P,SPEAKER

PARTS LIST

TUNER P.C.BOARD ASSY

Ref. No.	Part No.	Description
71	614 247 5720	ASSY,PCB,TUNER
BPF1	614 228 4704	FILTER,LC
C202	403 080 8902	POLYPRO 1500P J 100V
or	403 210 8307	POLYPRO 1500P J 50V
CN1	614 035 5956	SOCKET,4P,AMP.
D001	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D201	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
IC001	409 016 0200	IC LA1186N-AUDIO
IC101	409 163 3802	IC LA1805-SS
L001	614 233 5864	INDUCTOR,AIR
or	614 238 1298	INDUCTOR,AIR
L002	614 035 0012	VHF COIL
or	614 229 0217	VHF COIL
L003	614 028 6731	FILTER
L005	614 230 6888	ASSY,BAR ANTENNA
or	614 254 9964	ASSY,BAR ANTENNA
L006	614 034 1607	O.S.C COIL,270UH
or	614 247 9377	TRANSFORMER,OSC,270UH
S1	614 244 8335	SWITCH,SLIDE,BAND SELECT
T103	614 030 4220	I.F.T,FM
or	614 247 9391	TRANSFORMER,IF,10.7MHZ
T104	614 030 4039	I.F.T,AM
or	614 247 9384	TRANSFORBER,IF,455KHZ
VC01	614 239 2416	VC,TUNING CAPACITOR
VR201	614 250 7247	POTENTIOMETER,10K OHM
or	614 250 7414	POTENTIOMETER,10K OHM
or	614 226 3891	POTENTIOMETER,10K OHM
X101	614 030 5630	IF FILTER,RED,FM
or	614 030 5647	IF FILTER,BLUE,FM
or	614 030 5654	IF FILTER,ORANGE,FM
or	614 030 5661	IF FILTER,BLACK,FM
or	614 030 5678	IF FILTER,WHITE,FM
X103	614 030 7580	I.F FILTER,AM
TP	614 221 8273	TERMINAL,1P,VCO TEST POINT
or	614 254 3597	TERMINAL,1P,VCO TEST POINT

PRE-AMP. P.C.BOARD ASSY

Ref. No.	Part No.	Description
72	614 253 8234	ASSY,PCB,PRE-AMP.
C1910	403 056 7106	POLYESTER 1000P J 50V
CM906	614 206 0230	SOCKET,6P,POWER AMP PCB
CM907	614 206 0223	SOCKET,5P,POWER AMP PCB
CN901	614 017 2119	PLUG,4P,R/P HEAD
CN904	614 017 2096	PLUG,2P,MOTOR POWER SWITCH
CN905	614 223 9209	SOCKET,2P,MOTOR
or	614 020 6548	SOCKET,2P,MOTOR
IC901	409 115 6806	IC BA3312N
L1905	614 034 2048	O.S.C COIL,BIAS
Q1907	405 012 1807	TR 2SC1815-BL
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
S1701	614 246 4878	SWITCH,SLIDE,RECORD/PLAY (S1701,S1801,S1901)

POWER AMP. P.C.BOARD ASSY

Ref. No.	Part No.	Description
73	614 253 8265	ASSY,PCB,POWER AMP
C743	403 057 3800	POLYESTER 0.1U M 50V
C843	403 057 3800	POLYESTER 0.1U M 50V
CP951	614 238 9157	ASSY,CONNECTOR-S,2P, POWER SUPPLY
or	614 246 6391	ASSY,CONNECTOR-S,2P, POWER SUPPLY
CP960	614 020 6548	SOCKET,2P,CP951 MTG.
or	614 223 9209	SOCKET,2P,CP951 MTG.
D930	407 053 8708	ZENER DIODE MTZ9.1A
IC902	⚠409 249 3207	IC BA5413
Q721	405 012 1807	TR 2SC1815-BL
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q821	405 012 1807	TR 2SC1815-BL
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q930	⚠405 077 9008	TR TIP29B
or	⚠405 023 5306	TR 2SD400-F-MP
	614 229 8107	HEAT SINK,IC902
	411 021 5705	SCR S-TPG BIN 3X6MM, IC902 MTG.
R931	⚠402 041 4601	FUSIBLE RES 10J - 1/4W

POWER SUPPLY P.C.BOARD ASSY

Ref. No.	Part No.	Description
74	614 238 8754	ASSY,PCB,POWER SUPPLY
CM951	614 017 2249	PLUG,2P,AMP.
CM952	614 020 8948	SOCKET,2P,BATTERY
CN01	⚠614 020 7590	SOCKET, AC IN (WITH AC/DC SWITCH,S3951)
D3951	⚠407 143 4801	DIODE GP15DL-5001 (D3951-D3954)
or	⚠407 143 4900	DIODE GP15GL-5014
or	⚠407 098 3300	DIODE RL153-BF-S2
T3951	⚠614 234 5559	POWER TRANSFORMER
	⚠614 208 4540	FUSE HOLDER

BATTERY TERMINAL P.C.BOARD ASSY

Ref. No.	Part No.	Description
75	614 238 8778	ASSY,PCB,BATTERY TERMINAL
CN952	614 020 6548	SOCKET,2P,BATTERY
or	614 223 9209	SOCKET,2P,BATTERY
	614 118 4036	TERMINAL BATTERY

PARTS LIST

CONTROL P.C.BOARD ASSY

Ref. No.	Part No.	Description
76	614 253 8258	ASSY,PCB,CONTROL
CN02	614 238 1274	JACK,PHONES
CN11	614 035 4935	SOCKET,4P,TUNER
or	614 237 9776	SOCKET,4P,TUNER
CN906	614 035 4959	SOCKET,6P,PRE-AMP.
or	614 255 4036	SOCKET,6P,PRE-AMP.
CN907	614 035 4942	SOCKET,5P,PRE-AMP.
or	614 237 9783	SOCKET,5P,PRE-AMP.
CP03	614 017 2102	PLUG,3P,SPEAKER
D502	407 137 4206	LED SL-1255-05
D503	408 008 9207	LED SLR-56VCF07-P,CD PLAY
or	408 008 9108	LED SLR-56VCF07-N
or	408 008 9009	LED SLR-56VCF07-M
D504	408 008 9207	LED SLR-56VCF07-P,REPEAT
or	408 008 9108	LED SLR-56VCF07-N
or	408 008 9009	LED SLR-56VCF07-M
D505	408 008 9207	LED SLR-56VCF07-P,MEMORY
or	408 008 9108	LED SLR-56VCF07-N
or	408 008 9009	LED SLR-56VCF07-M
D921	407 004 9105	DIODE DSF10C
D922	407 004 9105	DIODE DSF10C
S501	614 220 5471	SWITCH,TACT,STOP/CLEAR
or	614 220 5556	SWITCH,TACT,STOP/CLEAR
S502	614 220 5471	SWITCH,TACT,PLAY/PAUSE
or	614 220 5556	SWITCH,TACT,PLAY/PAUSE
S503	614 220 5471	SWITCH,TACT,SKIP/SEARCH,FF
or	614 220 5556	SWITCH,TACT,SKIP/SEARCH,FF
S504	614 220 5471	SWITCH,TACT,SKIP/SEARCH,BACK
or	614 220 5556	SWITCH,TACT,SKIP/SEARCH,BACK
S505	614 220 5471	SWITCH,TACT,REPEAT
or	614 220 5556	SWITCH,TACT,REPEAT
S506	614 220 5471	SWITCH,TACT,MEMORY
or	614 220 5556	SWITCH,TACT,MEMORY
S711	614 247 5911	SWITCH,SLIDE,FUNCTION (S711,S811,S911)
S721	614 246 7138	SWITCH,BASSXPANDER
VR701	614 238 8860	VR,SLIDE,TONE(VR701,VR801)
VR702	614 238 8853	VR,SLIDE,VOLUME(VR702,VR802)

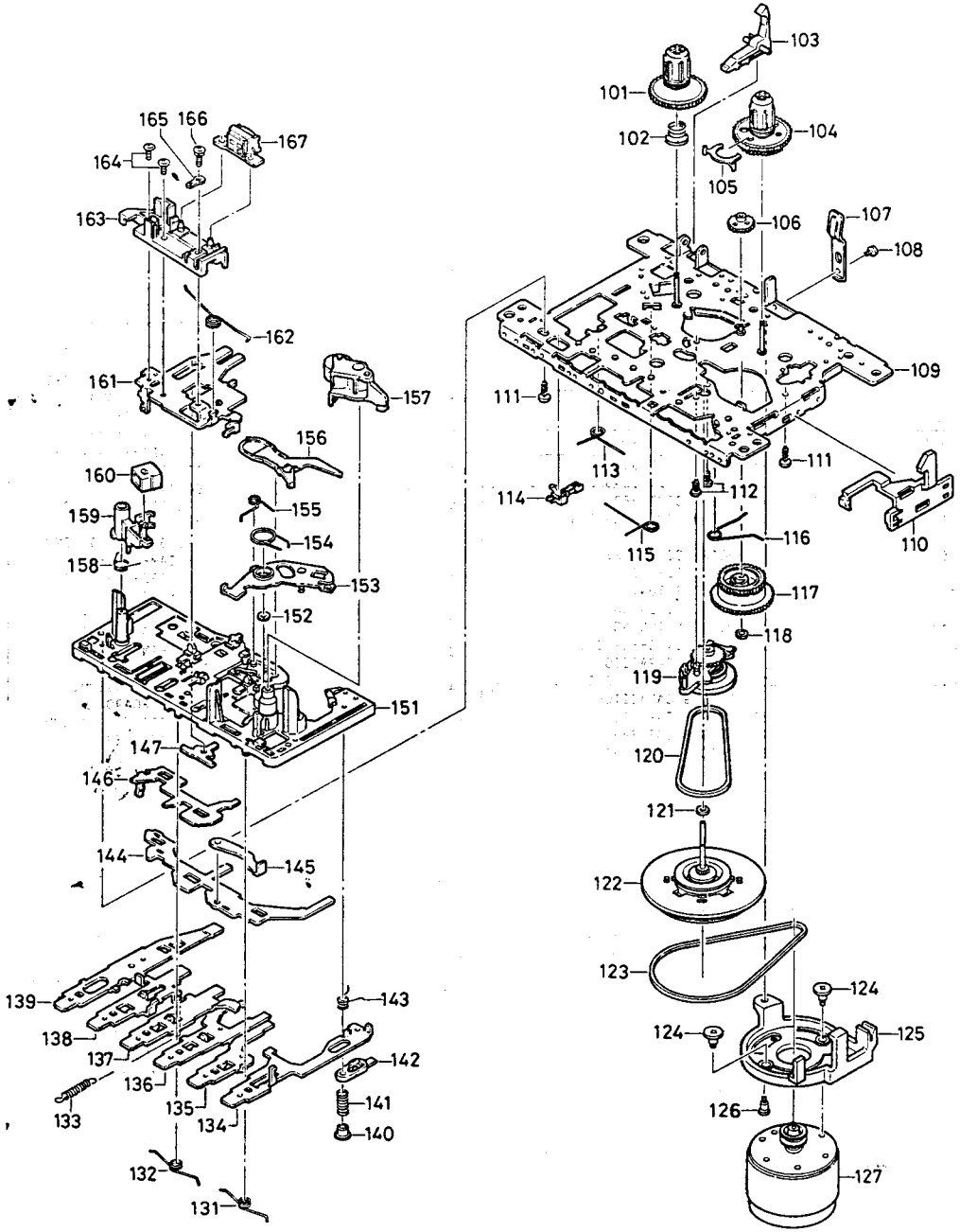
CD CONNECT P.C.BOARD ASSY

Ref. No.	Part No.	Description
77	614 253 8241	ASSY,PCB,CD CONNECT
CN501	614 238 2042	CONNECTOR-P,8P,CD MAIN P.C.B
CN502	614 238 2035	CONNECTOR-P,7P,CD MAIN P.C.B
CN503	614 240 8322	CONNECTOR-P,6P,CD MAIN P.C.B
D501	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
IC501	410 141 4001	IC LC66406A-4879
Q501	405 000 4407	TR DTC124ES
TP	614 221 8273	TERMINAL,1P,SERVICE MODE
or	614 254 3597	TERMINAL,1P,SERVICE MODE
TP	614 221 8273	TERMINAL,1P,KEY
or	614 254 3597	TERMINAL,1P,KEY
X501	614 215 5523	RESONATOR,CERAMIC,4.19MHZ
or	614 215 5561	RESONATOR,CERAMIC,4.19MHZ

CD MAIN P.C.BOARD ASSY

Ref. No.	Part No.	Description
78	614 240 6960	ASSY,PCB,CD MAIN
or	614 246 3529	ASSY,PCB,CD MAIN
CN301	614 227 7706	SOCKET,13P,PICK-UP
CN401	614 017 2577	PLUG,6P,CD MECHANISM
CN402	614 238 2059	CONNECTOR-S,7P,CD CONNECT
CN403	614 238 2066	CONNECTOR-S,8P,CD CONNECT
CN404	614 240 8339	CONNECTOR-S,6P,CD CONNECT
D401	407 050 7209	ZENER DIODE GZA8.2X
IC301	409 245 4802	IC LA9210M
IC401	⚠409 267 8109	IC BA6296FP
IC451	409 262 6209	IC LC7861NE
IC981	409 265 6008	IC LC78815MF
ICP01	⚠614 205 2907	IC PROTECTOR,ICP-N20
ICP02	⚠614 205 2884	IC PROTECTOR,ICP-N10
L451	614 028 4133	FILTER,10UH
Q301	405 007 6701	TR 2SB598-F-NP
or	405 006 3909	TR 2SA952-K
or	405 006 4005	TR 2SA952-L
Q302	405 014 4509	TR 2SC2412K-R
or	405 011 1006	TR 2SC1623-L6
Q401	⚠405 009 5207	TR 2SB927-S
or	⚠405 009 5306	TR 2SB927-T
or	⚠405 001 9302	TR 2SA1020-Y
Q402	⚠405 077 9008	TR TIP29B
or	⚠405 023 3005	TR 2SD330-E
or	⚠405 023 3104	TR 2SD330-F
or	⚠405 035 7107	TR 2SD1913-R
or	⚠405 035 7206	TR 2SD1913-S
Q781	405 014 4509	TR 2SC2412K-R
or	405 011 1006	TR 2SC1623-L6
Q782	405 014 4509	TR 2SC2412K-R
or	405 011 1006	TR 2SC1623-L6
Q881	405 014 4509	TR 2SC2412K-R
or	405 011 1006	TR 2SC1623-L6
Q882	405 014 4509	TR 2SC2412K-R
or	405 011 1006	TR 2SC1623-L6
R004	401 146 6909	CARBON 0.000 ZA 1/8W
or	401 037 5004	(R004-R009,R013-R015,
R022	401 028 0605	CARBON 0.000 ZA 1/8W
or	401 035 4108	(R022-R025,R027,R028, R030,R031,R033-R038, R040-R043,R045,R046)
R048	401 028 0605	CARBON 0.000 ZA 1/8W
or	401 035 4108	(R048-R050)
S507	614 230 8578	SWITCH,PUSH,OPEN
SVR302	614 223 1906	POTENTIOMETER,10K OHM
or	614 250 7414	POTENTIOMETER,10K OHM
TP	614 221 8273	TERMINAL,TE
or	614 254 3597	TERMINAL,TE
TP	614 221 8273	TERMINAL,GND
or	614 254 3597	TERMINAL,GND
TP	614 221 8273	TERMINAL,VC
or	614 254 3597	TERMINAL,VC
X451	614 231 2667	RESONATOR,16.93MHZ
	614 121 5891	HEAT SINK
	411 021 5705	SCR S-TPG BIN 3X6MM
or	614 254 3597	TERMINAL

EXPLODED VIEW (TAPE MECHANISM)



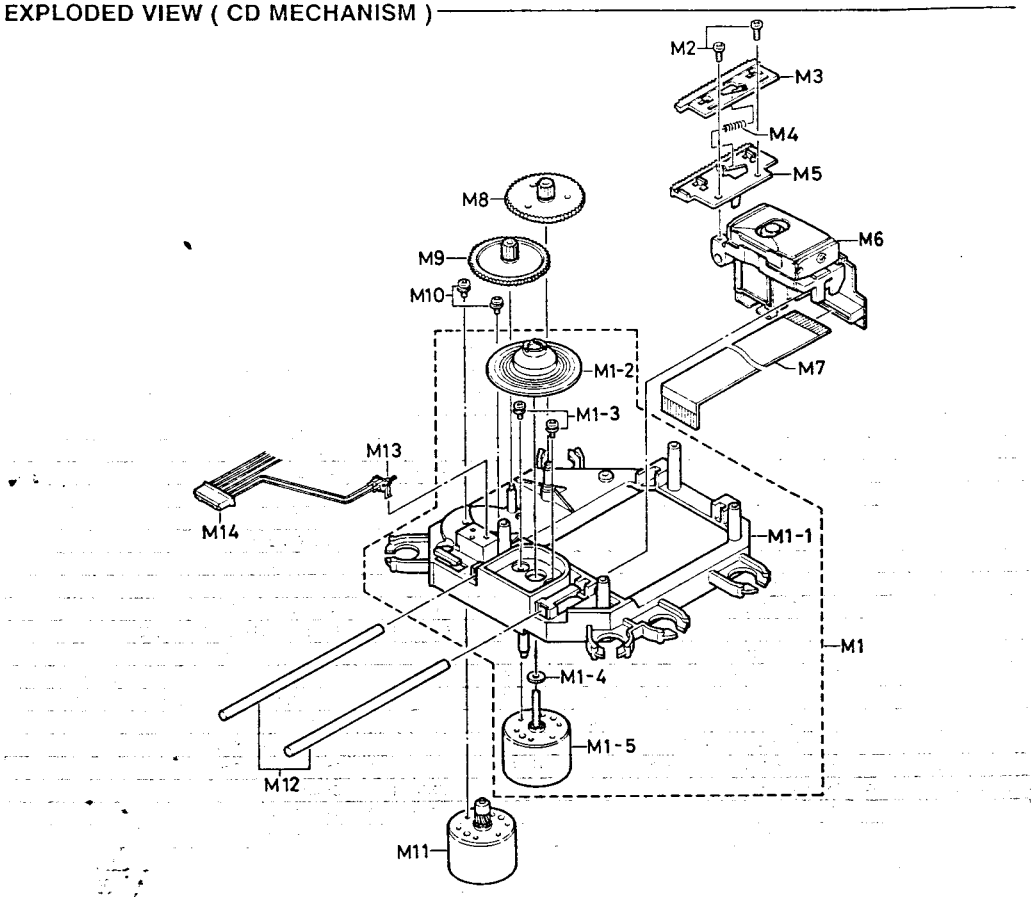
PARTS LIST

TAPE MECHANISM (TM-Z1TN)

Ref. No.	Part No.	Description
101	614 204 5695	REEL ASSY,SUPPLY REEL ASSY
102	614 205 1337	SPRING COIL,BACK TENSION SPRING
103	614 140 1508	LEVER,RECORD SAFETY LEVER
104	614 204 5701	REEL ASSY,TAKE-UP REEL ASSY
105	614 204 8771	LEVER,SENSOR
106	614 134 9046	GEAR,FF GEAR
107	614 151 8299	SPRING PLATE,CASSETTE HOLDER SPRING
108	412 026 2003	SPECIAL SCREW,C TAPPING SCREW 2X4MM
109	614 067 2770	CHASSIS ASSY
110	614 206 1534	LEVER, EJECT SLIDE LEVER
111	412 026 2201	SPECIAL SCREW,P TAPP BIND SCREW,2X5MM
112	412 026 2300	SPECIAL SCREW,CAMERA TAPP,2X4.5MM
113	614 152 1282	SPRING WIRE,PAUSE LEVER SPRING
114	614 024 1693	SWITCH,S1941,MOTOR POWER
115	614 152 1305	SPRING WIRE,REC BUTTON LEVER SPRING
116	614 152 1275	SPRING WIRE,EJECT ACTUATOR SPRING
117	614 134 9053	GEAR,CAM GEAR
118	412 013 5000	SPECIAL WASHER,P WASHER CUT 1.2X3.8X0.3MM
119	614 205 6202	PULLEY ASSY,RF CLUTCH ASSY
120	614 204 8740	SQUARE BELT,RF BELT
121	412 026 2508	SPECIAL WASHER,P WASHER 2X3.5X0.3MM
122	614 210 9946	FLYWHEEL DISK ASSY
123	614 205 5373	BELT,MAIN BELT
124	412 031 6508	SPECIAL SCREW,MOTOR COLLER SCREW
125	614 205 5328	BRACKET,MOTOR
126	412 031 9400	SPECIAL SCREW,MB SCREW
127	614 249 9832	ASSY,MOTOR
131	614 152 1268	SPRING WIRE,BUTTON LEVER SPRING (B)
132	614 152 1251	SPRING WIRE,BUTTON LEVER SPRING (A)
133	614 210 6235	SPRING,TENSION,PLAY BUTTON LEVER SPRING
134	614 210 6730	LEVER,PAUSE BUTTON LEVER
135	614 206 1589	LEVER,STOP/EJECT BUTTON LEVER
136	614 206 1572	LEVER,F.FWD BUTTON LEVER
137	614 206 1565	LEVER,REW BUTTON LEVER
138	614 206 1558	LEVER,PLAY BUTTON LEVER
139	614 206 1541	LEVER,REC BUTTON LEVER
140	614 129 0669	BOSS,PAUSE STOPPER
141	614 151 7186	SPRING COIL,PAUSE LEVER SPRING
142	614 208 0320	LEVER,PAUSE LEVER (E)
143	614 152 1244	SPRING WIRE,PAUSE CONTROL SPRING
144	614 139 1120	SLIDE,PUSH BUTTON ACTUATOR
145	614 140 1539	LEVER,EJECT KICK LEVER
146	614 201 1744	SLIDE,SWITCH ACTUATOR
147	614 129 0676	BOSS,PR STOPPER

Ref. No.	Part No.	Description
151	614 067 3258	SUB CHASSIS ASSY,BASE ASSY
152	412 026 1808	SPECIAL WASHER,P W CUT 1.45X3.8X0.5MM
153	614 070 0916	LEVER ASSY,GEAR PLATE ASSY
154	614 151 8312	SPRING PLATE,GEAR PLATE SPRING
155	614 152 1299	SPRING WIRE,M CONTROL SPRING
156	614 140 1614	LEVER,SENSING LEVER
157	614 237 2371	ASSY,PINCH ROLLER
158	614 201 8781	SPRING COIL,ERASE HEAD
159	614 205 1306	LEVER,ERASE HEAD
160	614 221 0284	HEAD,ERASE
161	614 211 6944	SLIDE,HEAD PANEL
162	614 210 3432	SPRING WIRE,PANEL (P) SPRING
163	614 251 5839	BASE,HEAD BASE
164	412 004 0809	SPECIAL SCREW,2X5MM, R/P HEAD
165	614 251 5853	LUG,R/P HEAD
166	412 004 0809	SPECIAL SCREW,2X5MM, HEAD PANEL
167	614 251 4474	HEAD,RECORD/PLAY
CN901	614 238 9126	ASSY,CONNECTOR-S,4P,R/P HEAD
or	614 246 6360	ASSY,CONNECTOR-S,4P,R/P HEAD
CN904	614 238 9133	ASSY,CONNECTOR-S,2P, POWER SWITCH
or	614 246 6377	ASSY,CONNECTOR-S,2P, POWER SWITCH

EXPLODED VIEW (CD MECHANISM)



PARTS LIST

CD MECHANISM (PM-DADPSS5/SP)

Ref. No.	Part No.	Description
M1	614 240 4935	ASSY,CHASSIS
M1-1	614 237 1367	CHASSIS,BASE CHASSIS
M1-2	614 237 8663	TURNTABLE,TURN TABLE
or	614 245 4268	TURNTABLE,TURN TABLE
M1-3	411 002 4901	SCR PAN 2X4MM,MOTOR FIX
M1-4	412 032 0208	SPECIAL WASHER, 1.9X5X0.3MM
M1-5	614 045 2105	COMMUTATE MOTOR, SPINDLE MOTOR
or	614 248 2315	COMMUTATE MOTOR, SPINDLE MOTOR
M2	412 045 0905	SPEIAL SCREW,2X6MM, PACK GEAR FIX
M3	614 209 5911	GEAR,PICK-UP,RACK GEAR
M4	614 210 9755	SPRING,COMP, RACK GEAR SPRING
M5	614 209 5904	GEAR,PICK-UP RACK GEAR
M6	614 239 1303	PICK-UP,LASER, PICK-UP
M7	614 240 5697	CORD,PICK-UP LEAD
M8	614 209 5881	GEAR,GEAR PICK-UP MOVING
M9	614 209 5898	GEAR,GEAR RELAY
M10	411 044 7205	SCR PAN+SW 2X4MM,MOTOR FIX
M11	614 237 2111	ASSY,MOTOR,SLED MOTOR
or	614 237 2098	COMMUTATE MOTOR ASSY, SLED MOTOR
M12	614 145 9622	SHAFT,PICK-UP RAIL
or	614 230 0411	SHAFT,PICK-UP RAIL
M13	614 024 1617	SWITCH,LIMIT SWITCH
or	614 214 9379	SWITCH,LIMIT SWITCH
M14	614 240 5154	ASSY,CONNECTOR-S, MOTOR AND SWITCH LEAD
or	614 246 6414	ASSY,CONNECTOR-S, MOTOR AND SWITCH LEAD

IC DESCRIPTION

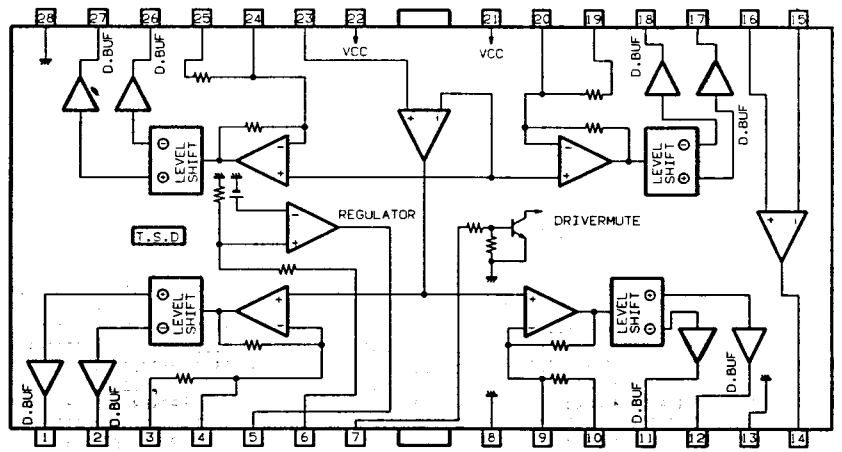
IC301 LA9210M (SERVO SIGNAL PROCESSOR)

No.	PIN NAME	I/O	FUNCTION
1	NC		Non Connection
2	VEE		-5V
3	E	I	IV Convert Input (from Photo Diode E)
4	F	I	IV Convert Input (from Photo diode F)
5	FN	I	IV Converter Input
6	FO	O	IV Converter Output
7	TEAO	O	Tracking Error Amplifier Output
8	VREF2	I	Reference Voltage 2
9	VREF3	I	Reference Voltage 3
10	TES1	I	Test Input
11	ATSC	I	+ Input of Anti Shock Detect Amplifier
12	ATSC-	I	- Input of Anti Shock Detect Amplifier
13	TPA+	I	- Input of Tracking Pulse Amplifier
14	TPA-	I	+ Input of Tracking Pulse Amplifier
15	TPAO	O	Tracking Pulse Amplifier Output
16	TOFS	I	Input for Tracking Offset
17	THDS	I	Tracking Servo Hold Switch
18	TD+	I	Add the Track Jump Pulse
19	JPO	O	Track Jump Pulse Amplifier Output
20	SLEQ	I	Input for Sled Servo Equalizer
21	TDO	O	Tracking Actuator Coil Driver Output
22	FDO	O	Focus Actuator Coil Driver Output
23	FD-	I	Input for Focus Actuator Coil Driver
24	FSW	I	Focus Servo Switch
25	NC		Non Connection
26	FEAO	O	Focus Error Amplifier Output
27	FE+	I	+ Input of Focus Error Amplifier
28	FD+	I	+ Input of Focus Actuator Coil Driver
29	SPO	O	CLV Error Amplifier Output
30	SPO-	I	Input for Spindle Motor Driver
31	SPDO	O	Spindle Motor Driver Output
32	VEE		-5V
33	SLDO	O	Sled Motor Driver Output
34	SL-	I	- Input of Sled Motor Driver
35	SL+	I	+ Input of Sled Motor Driver
36	VCC		+5V
37	SLSW	I	Sled Servo Switch
38	DEFO	O	Defect Signal Output
39	2FREQ	I	Input for VCO
40	DRF	O	Focusing Servo ON : High Level

No.	PIN NAME	I/O	FUNCTION
41	NC		Non Connection
42	JP-	I	- Input of Track Jump Pulse Amplifier
43	JP+	I	+ Input of Track Jump Pulse Amplifier
44	THLD	I	Hold of Output Voltage of Tracking Servo
45	TGL	I	Tracking Gain Low
46	TOFF	I	Input For Off the Tracking Servo
47	TES	O	Tracking Error Signal
48	HFL	O	Detect Track Signal
49	FZD	O	Detect S Carve of Focus Error Signal
50	FOCS	I	Input For Off the Focus Servo
51	CLV-	I	- Input of CLV Error Amplifier
52	CLV+	I	+ Input of CLV Error Amplifier
53	SLCO	O	Slice Level Control Amplifier Output
54	EFMO	I	EFMO (RF) Signal
55	AI	I	EFMO (RF) Signal
56	VDD		+5V
57	PDO	I	+ Input of VCO Control Amplifier
58	PDO-	I	- Input of VCO Control Amplifier
59	VCOC	I	VCO Control Amplifier Output
60	VCOO	O	VCO Output
61	LF1	I	Input of Low Pass Filter
62	CLK	I	Clock
63	LASER	I	Laser Control Signal
64	66/60	I	Select of DSP LC7866/LC7861
65	NC		Non Connection
66	DF2	I	Input for Defect Pulse width Control
67	DF1	I	Input for Defect Pulse width Control
68	PH3	O	Defect Detect Timing
69	BH	I	Track Detect Timing
70	PH	I	Focus Detect Timing
71	GND		Ground
72	RF SUM	O	RF SUM Amplifier Output
73	RFS-	O	IV Converter Output
74	LDO	O	Laser Diode ON
75	LDS	I	Input of Auto Laser Power Control
76	LDC	I	Input of Auto Laser Power Control
77	VDD		+5V
78	FIN1	I	IV Convert Input (From Photo Diode A+C)
79	FIN2	I	IV Convert Input (From Photo Diode B+D)
80	VREF1	I	Reference Voltage 1

IC BLOCK DIAGRAM & DESCRIPTION

IC401 BA6296FP (PICK-UP & MOTOR DRIVER)



T.S.D : THERMAL SHUT DOWN D.BUF : DRIVE BUFFER

IC501 LC66406A-4879 (MICROPROCESSOR)

Init. = Initial status

No.	PIN NAME	DESCRIPTION	Init.
1	IR	Remote control signal input	
2	DRF	RF signal detect	
3	VR_UP	Electrical volume control (up)	L
4	VR_DWN	Electrical volume control (down)	L
5	P_CONB	Power on/off for around IC	H
6	P_CON	Power on/off for around IC	L
7	SL+	Sled motor control	L
8	SL-	Sled motor control	L
9	SQOUT	LC7861NE interface (command data)	
10	COIN	LC7861NE interface (subq data)	L
11	CQCK	LC7861NE interface (clock)	L
12	WRQ	LC7861NE interface (subq trigger)	
13	RWC	LC7861NE interface (data latch)	L
14	A_MUTE	Audio mute control output	H
15	XRST	Reset signal output to around ICs	L
16	P33	Not used	
17	SEG_A	8-seg LED	H
18	SEG_B	8-seg LED	H
19	TEST	VSS	
20	VSS	VSS	
21	OS1	Clock input (4.19MHZ)	

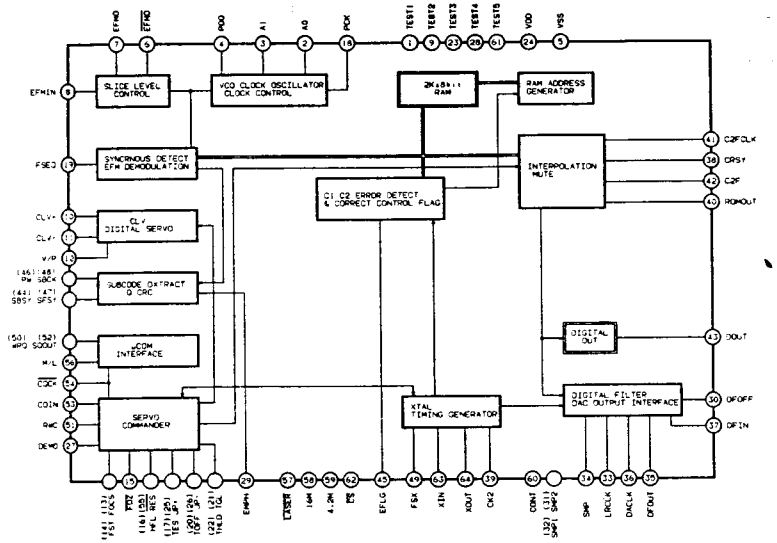
No.	PIN NAME	DESCRIPTION	Init.
22	OS2	Clock output (4.19MHz)	
23	RES	Reset signal input	
24	SEG_C	8-seg LED	H
25	SEG_D	8-seg LED	H
26	SEG_E	8-seg LED	H
27	SEG_F	8-seg LED	H
28	SEG_G	8-seg LED	H
29	SEG_H	8-seg LED	H
30	PLAY_LED	Play LED	H
31	REP_LED	Repeat LED	H
32	PRG_LED	Program LED	H
33	P63	not used	H
34	CD_FUNC	Function input (CD/others)	L
35	SERVICE	Service mode key	L
36	HIGH_ACC	High speed access switch	
37	SYNC_REC	Synchronous REC signal input	
38	LIMIT_SW	Pickup limit switch input	
39	OPEN_SW	Lid open switch input	
40	VDD		
41	KEY_IN	Key input (A/D covert)	
42	PE1	Pull up to VDD	

IC BLOCK DIAGRAM & DESCRIPTION

IC451 LC7861NE (Digital Signal Processor)

No	PIN NAME	I/O	DESCRIPTION
1	TEST1	I	For TEST. Normal time is non connection.
2	AO	O	Input from VCO output in LA9210 (8.6436MHz)
3	AI	I	Phase comparison output of VCO and EFM signal.
4	*PDO	O	
5	VSS		GND
6	$\overline{EFMO}$	O	Negative output through amplitude limiter. Antiphase of $\overline{EFMO}$. This signal use SLICE LEVEL CONTROL.
7	EFMO	O	Positive output through amplitude limiter. Antiphase of EFMO. This signal use SLICE LEVEL CONTROL.
8	EFMIN	I	Inputting HF signal of 1~2Vp-p. This signal use SLICE LEVEL CONTROL.
9	TEST2	I	For TEST. Normal time is non connection.
10	CLV+	O	Output for DISC MOTOR CONTROL.
11	CLV-	O	Output for DISC MOTOR CONTROL.
12	V/P	O	CLV rough Servo time : Output "H" Phase control time : Output "L"
13	FOCS	O	Output "H" : Lens pull up with slowly than stop the Focus
14	FST	O	Servo. If $\overline{FZD}$ generate, it reset output of FOCS. For lead-in of
15	$\overline{FZD}$	I	Focus
16	HFL	I	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP- It jump the prescribed number of track (1,4,16,64).
17	TES	I	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP- It jump the prescribed number of track (1,4,16,64).
18	PCK	O	PCK Monitor (4.3218MHz)
19	FSEQ	O	SYNC (FS of truth) detected from EFM signal = SYNC of counter : "H" (Latch Output during in 1 frame)
20	TOFF	O	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP- It jump the prescribed number of track (1,4,16,64).
21	TGL	O	
22	THLD	O	
23	TEST3	I	For TEST. Normal time is non connection.
24	VDD		+5V
25	JP+	O	Comply with command of track jump, it oscillate kick Pulse,
26	JP-	O	JP+ & JP- It jump the prescribed number of track (1,4,16,64).
27	DEMO	I	For adjustment of production process. Sound on function.
28	TEST4	I	For TEST. Normal time is non connection.
29	EMPH	O	Output is "H" time, it need de-emphasis
30	DFOFF	I	ON / OFF Switching of Digital Filter. Output "H" : Filter OFF

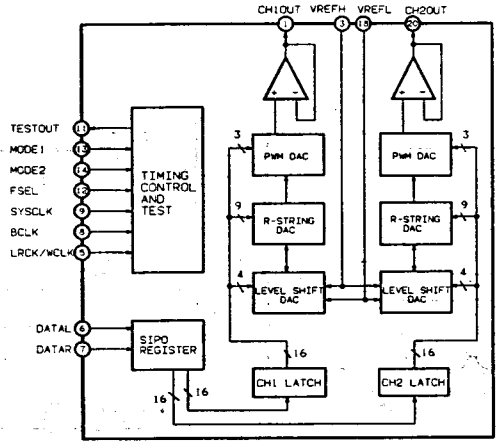
No	PIN NAME	I/O	DESCRIPTION
31	SMP2	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
32	SMP1	O	
33	LRCLK	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
34	SMP	O	
35	DFOUT	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
36	DACLK	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
37	DFIN	O	For TEST. Normal time is non connection.
38	LRSY	O	For output of signal that Comply with CD-ROM
39	CK2	O	For output of signal that Comply with CD-ROM
40	ROMOUT	O	For output of signal that Comply with CD-ROM
41	C2FLCK	O	For output of signal that Comply with CD-ROM
42	C2F	O	For output of signal that Comply with CD-ROM
43	DOUT	O	Output of DIGITAL OUT
44	SBSY	O	Synchronizing signal of sub-code block.
45	EFLG	O	For correction monitor of C1, C2, single, double
46	PW	O	SFSY is Synchronizing signal of sub-code & frame. Clock of
47	SFSY	O	eighth send to SBCK then read out the sub-code of P, Q, R, S,
48	SBCK	I	T, U, V, & W
49	FSX	O	Output of Synchronizing signal (7.35KHz)
50	WRQ	O	Data sub-code Q pass the CRC check then WRQ do "H" at
51	RWC	I	detect at external, Data read out from SQOUT by send the
52	SQOUT	O	$\overline{CQCK}$. RWC set the "H" by Micro Processor then it let
53	COIN	I	command by send with Synchronizing $\overline{CQCK}$ command data.
54	$\overline{CQCK}$	I	
55	$\overline{RES}$	I	Turn on the Power Supply time : Once "L"
56	M/L	I	Data of SQOUT want at the LBS first time : M/L set the "L".
57	$\overline{LASER}$	O	This output can control at Serial Control from Micro Processor
58	16M	O	16M Output (16.9344MHz)
59	4M	O	4M Output (4.2336MHz)
60	CONT	O	This output can control at Serial Control from Micro Processor
61	TEST5	I	For TEST. Normal time is non connection.
62	$\overline{CS}$	I	Chip select Terminal. This terminal "L" : LC7866NE is active (Internal Resistor : Pull Down)
63	XIN	I	Connection Terminal of crystal oscillation (16.9344MHz)
64	XOUT	O	Connection Terminal of crystal oscillation (16.9344MHz)



IC BLOCK DIAGRAM & DESCRIPTION

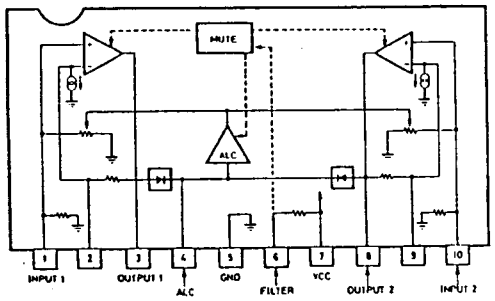
IC681 LC78815MF (D / A Convertor)

No.	PIN NAME	DESCRIPTION	I/O
1	CH1OUT	Output terminal for channel 1 (left channel).	O
2	REFH	"H" Terminal for reference voltage. Normal time is connect to AGND by capacitor.	O
3	VrefH	Input terminal for "H" reference voltage.	I
4	AVDD	Supply voltage terminal for analog root.	-
5	LRCK / WCLK	Input terminal for LR clock / word clock. Generate internal signal that latch data of digital audio (DATAL · DATAR)	I

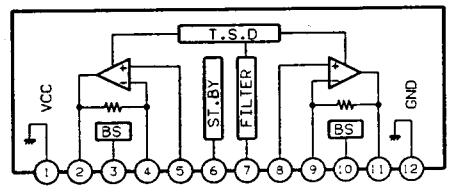


No.	PIN NAME	DESCRIPTION	I/O
6	DATAL	Data input terminal for digital audio. Input bit serial from MSB. FSEL = "L" when input data of channel 1. FSEL = "H" when input data of channel 1 and 2 by time sharing.	I
7	DATAR	Data input terminal for digital audio. Input bit serial from MSB. FSEL = "L" when input data of channel 2. FSEL = "H" when selection terminal for interface.	I
8	BCLK	Input terminal for bit clock. This clock for reading the digital audio data in LSI by bit serial. SYSCLK fixed "L" or "H" when BCLK is system clock for LSI.	I
9	SYSCLK	Input terminal for system clock. This clock for LSI operating. But this terminal change selection for interface by mode.	I
10	DVDD	Supply voltage terminal for digital root.	-
11	TSTOUT	Output terminal for test.	O
12	FSEL	This terminal is "L" when digital audio data input from DATAL and DATAR at same time. This terminal is "H" when digital audio data input from DATAL at time sharing.	I
13	MODE 1	Select terminal for interface	I
14	MODE 2	Select terminal for interface	I
15	DGND	Ground terminal for digital root	-
16	REFL	"L" Terminal for reference voltage. Normal time is connect to AGND by capacitor.	
17	AGND	Ground terminal for analog root	-
18	VrefL	Input terminal for "L" reference voltage.	I
19	NC	No connection.	-
20	CH2OUT	Output terminal for channel 2 (Right channel).	O

IC901 BA3312N (PRE-AMP.)



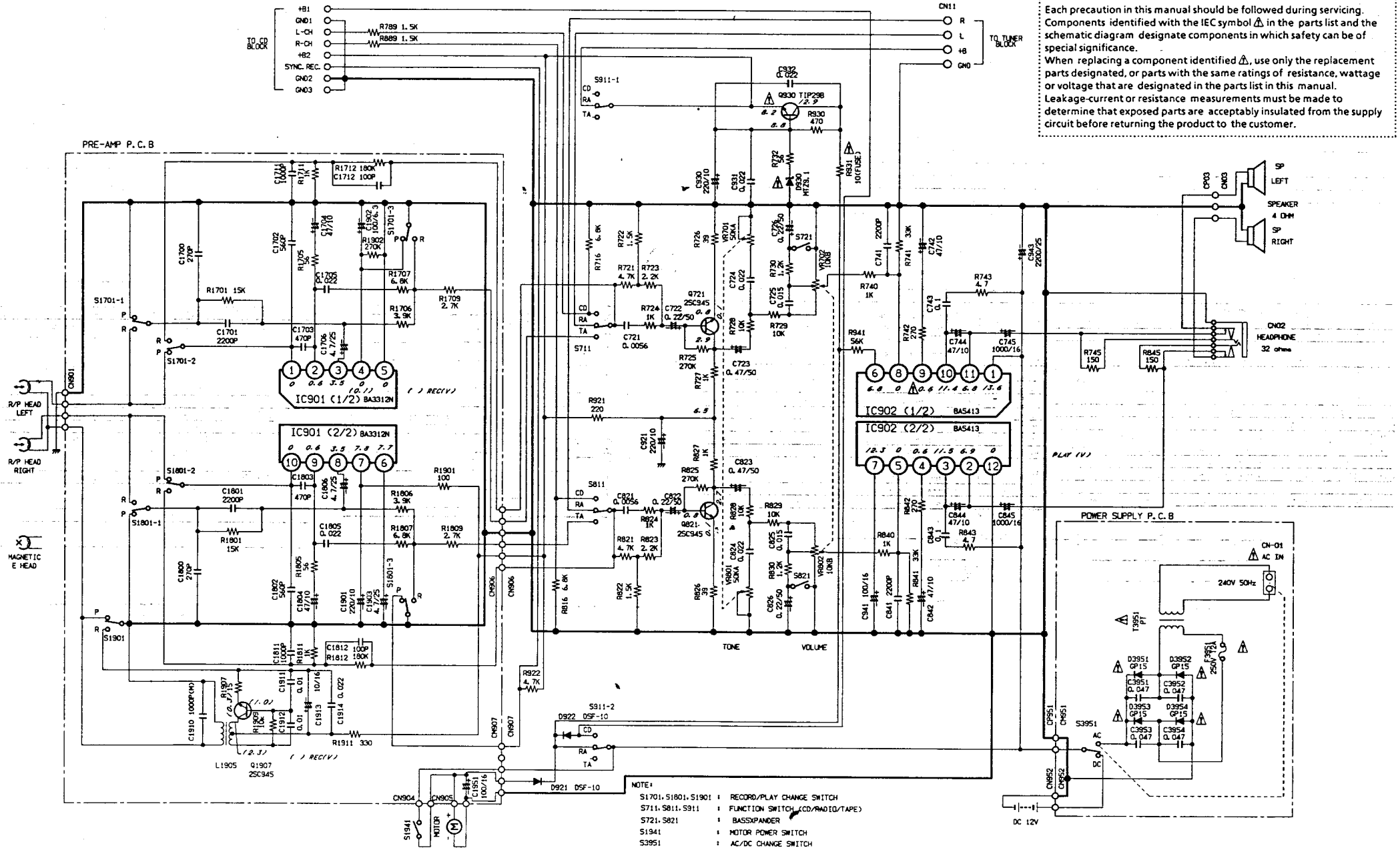
IC902 BA5413 (POWER AMP.)



CHEMATIC DIAGRAM (AMP.)

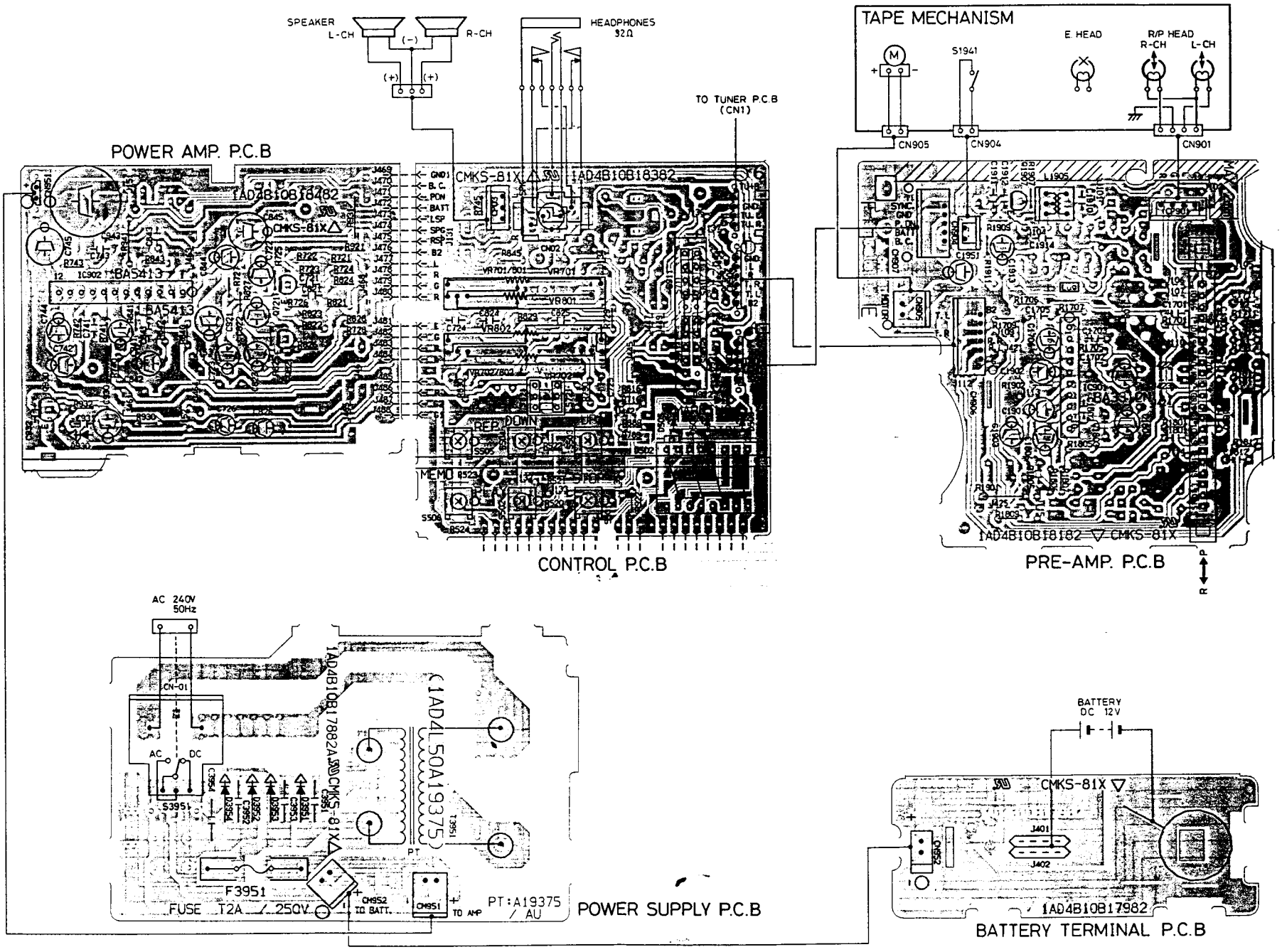
PRODUCT SAFETY NOTICE

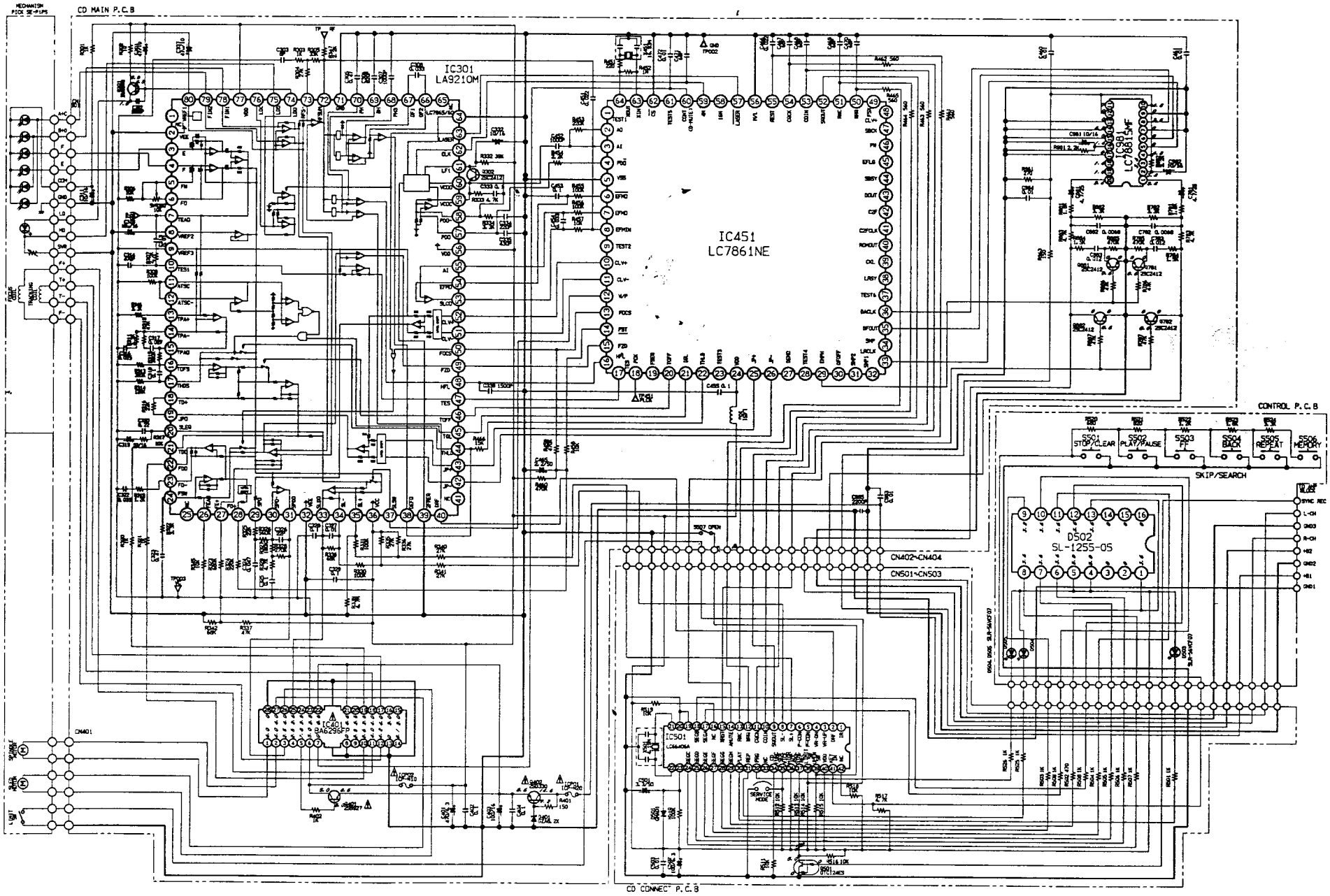
Each precaution in this manual should be followed during servicing.
Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance.
When replacing a component identified ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.



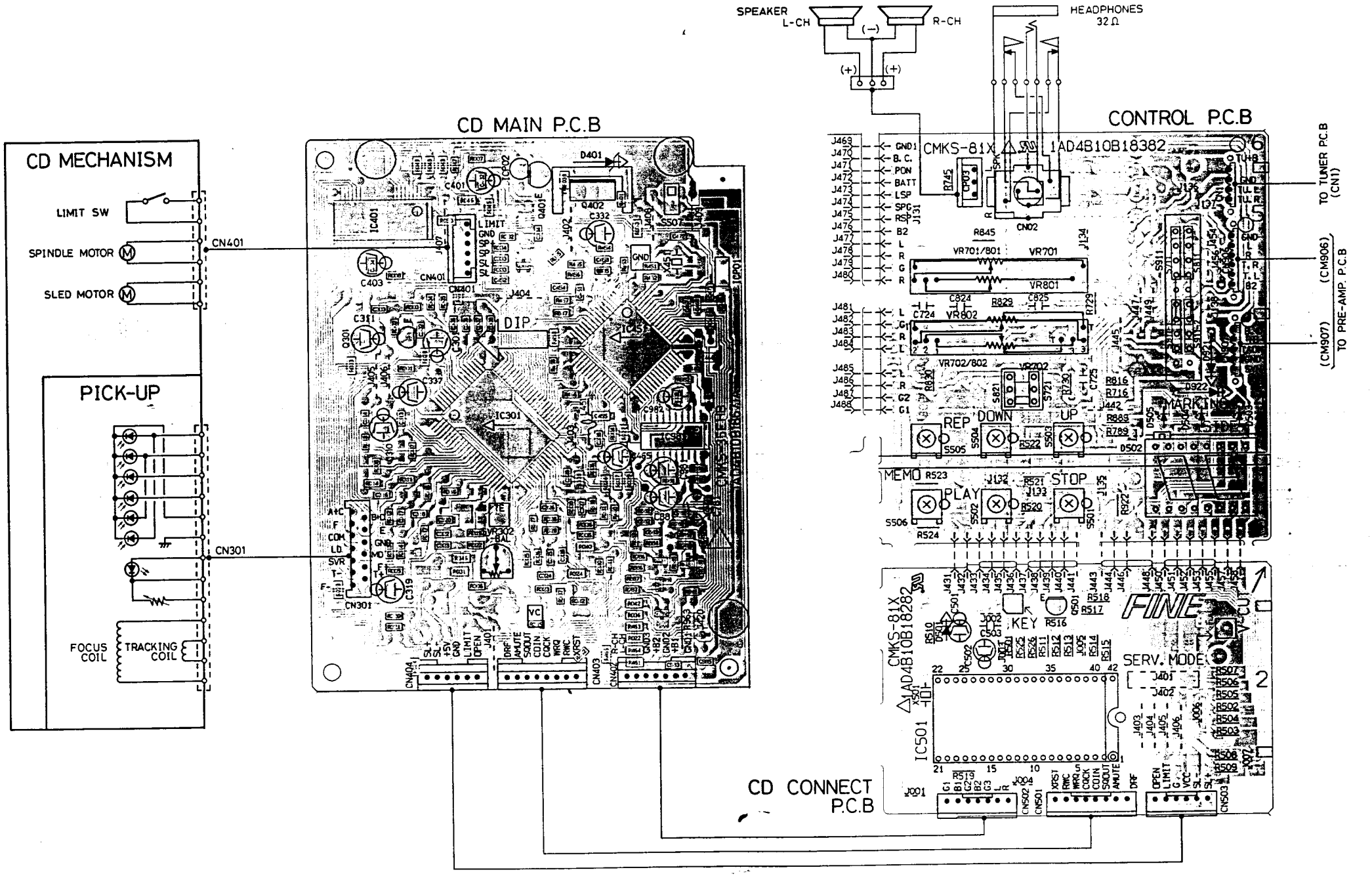
NOTE:

S1701, S1801, S1901	:	RECORD/PLAY CHANGE SWITCH
S711, S811, S911	:	FUNCTION SWITCH (CD/RADIO/TAPE)
S721, S821	:	BASSXPANDER
S1941	:	MOTOR POWER SWITCH
S3951	:	AC/DC CHANGE SWITCH

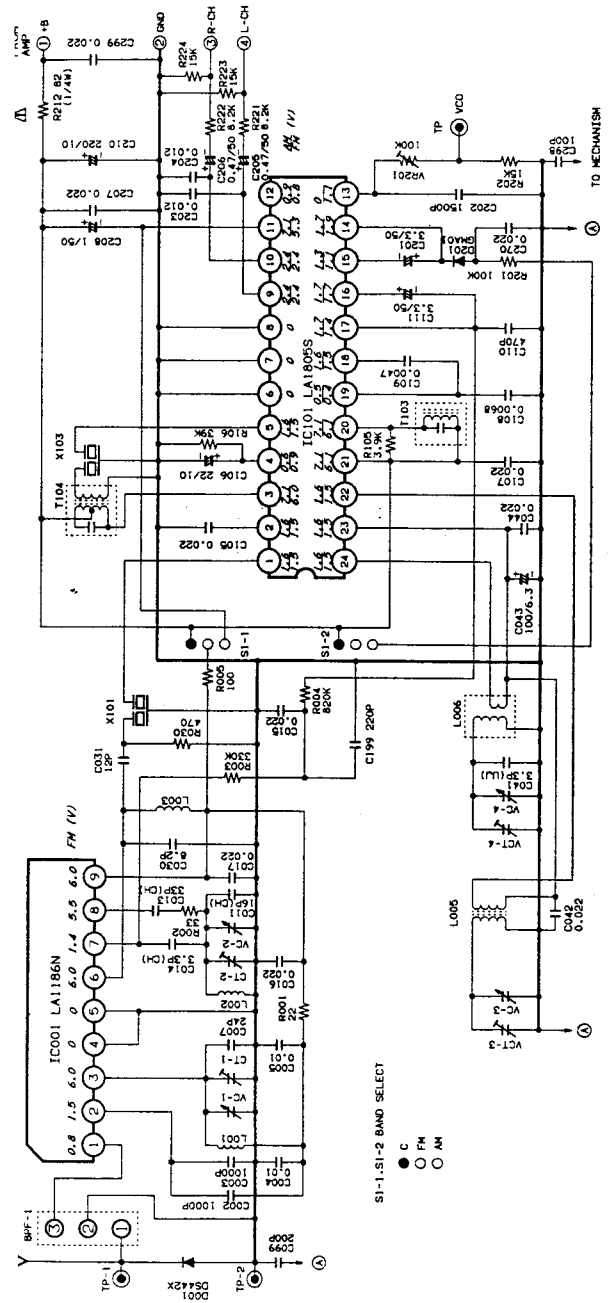

SPEAKER
L-CH
R-CH
HEADPHONES
32Ω
TO TUNER P.C.B
(CN1)
TAPE MECHANISM
E. HEAD
R/P HEAD
R-CH
L-CH
S1941
CN905
CN904
CN901
POWER AMP. P.C.B
CONTROL P.C.B
PRE-AMP. P.C.B
AC 240V
50Hz
CN-01
AC
DC
S3951
F3951
FUSE T2A / 250V
PT
PT:A19375
/ AU
POWER SUPPLY P.C.B
BATTERY
DC 12V
BATTERY TERMINAL P.C.B


CD MAIN P.C.B
IC301
LA9210M
IC451
LC7861NE
IC981
LC78815MF
CONTROL P.C.B
S501
STOP/CLEAR
S502
PLAY/PAUSE
S503
S504
BACK
S505
REPEAT
S506
MEMORY
SKIP/SEARCH
D502
SL-1255-05
CN402~CN404
CN501~CN503
CN401
IC401
BA6296FP
IC501
CD CONNECT P.C.B

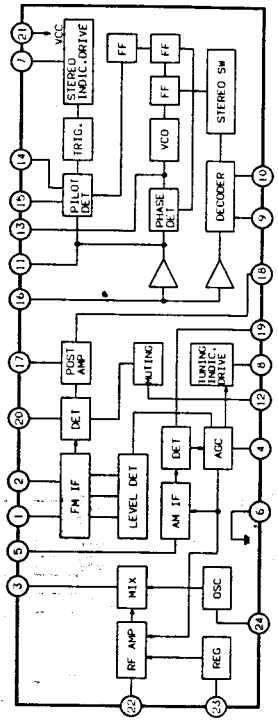
WIRING DIAGRAM (CD)



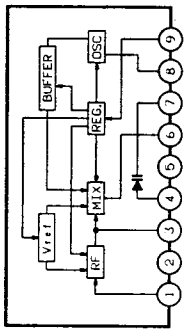
CHEMATIC DIAGRAM (TUNER)



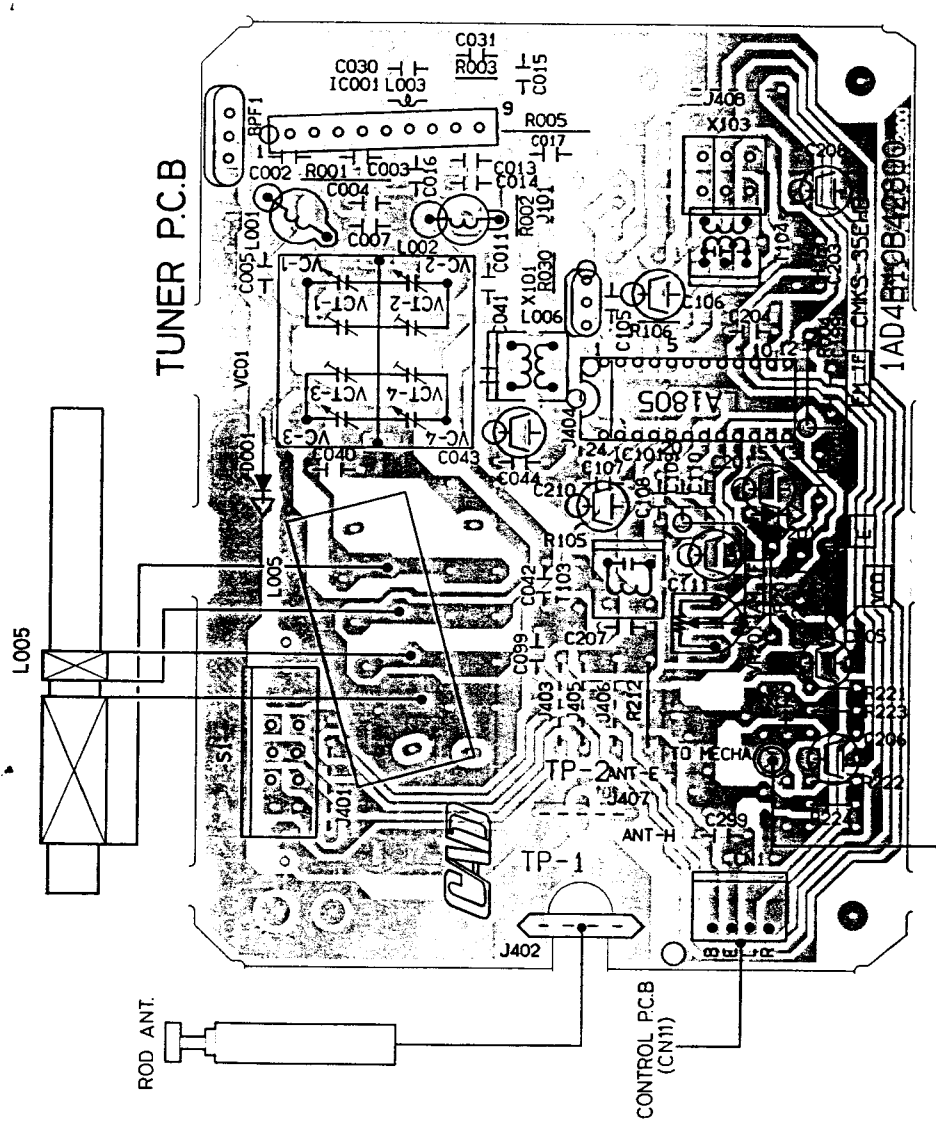
IC101 LA1805S (AM/FM IF DETECTOR)



IC001 LA1186N (FM FRONT END)



WIRING DIAGRAM (TUNER)



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